

WEEDS OF ALBERTA



Alberta
ENVIRONMENTAL CENTRE

Alberta
AGRICULTURE



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We trust that this publication will be a credit and a tribute to all our co-operators.

INTRODUCTION

A weed is defined as a plant growing out of place. Thus volunteer rapeseed would be considered to be a weed when found growing in a field of barley and conversely, barley would be a weed when growing in a field of rapeseed. Weeds are the most common plants found growing in the settled areas of the province.

The plants shown in this publication may grow in crops, in gardens, shelterbelts, fence rows or waste areas. They are almost all a problem because of their competition with the growing crop or because they are an unacceptable contaminant. Some few are included because they are classed as poisonous plants which may be toxic to animals either when grazed or when consumed in hay.

CLASSIFICATION OF WEEDS

Weeds may conveniently be classified on the basis of longevity.

Annual Weeds are those which complete their life cycle in less than twelve months.

There are two types of annual weeds:

- (i) **Summer annuals** are those plants whose seeds germinate in the spring and complete their life cycle by fall. In Alberta, summer annuals survive for less than six months.
- (ii) **Winter annuals** are those plants whose seeds germinate in late summer or early fall and form a low flat rosette of leaves before freeze-up. They overwinter as rosettes and continue growth the following spring, flower and mature seed by early summer after which time the plants die.

Biennial Weeds are those which require more than twelve months but not more than twenty-four months to complete their life cycle.

Perennial Weeds are those which survive for several years, at least for more than two years. Perennials may be further classified as:

- (i) **Non-creeping types** are those which propagate mainly by seed since they have no normal means of spreading vegetatively.
- (ii) **Creeping Types** propagate by seed and also by creeping roots or creeping rootstocks.

Comment

An understanding of the life history of a plant is essential for efficient and economical control. For instance, annual weeds are generally fairly easy to control in crops while they are young, either by tillage or by chemicals. However, any surviving plants produce an abundance of seeds which are often persistent in the soil and this makes eradication very difficult.

It is true to say that efficient weed control is dependent upon proper identification of the plant and an awareness of the life cycle of that plant. Sometime in the life cycle of any weed a weak point is present and at that time control methods are most effective.

Format of Manual

One page is dedicated to photographs of the plant at various stages of maturity. Seeds are shown with an alfalfa seed as a standard of size comparison or were drawn to show details.

The facing page is designed to provide written information which cannot be shown in a photograph. Such information might be to indicate what are the weedy characteristics and why the plant is of agricultural concern.

The plant families are arranged alphabetically by common name and the plants are listed alphabetically by common name under the families. At the end of the manual will be found a complete index of all accepted names of all the depicted plants.

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AMARANTH FAMILY

Amaranthaceae

REDROOT PIGWEED (*Amaranthus retroflexus* L.)

OTHER NAMES

redroot, rough pigweed, green amaranth, redroot amaranth.

Flowers: lack petals, grouped into dense spike-like clusters at the ends of the branches and main stem, each flower has several sharp pointed bracts resembling extra sepals, sepals 1-4.

ORIGIN

Probably tropical America.

Seeds: one per flower, glossy black 1 mm diameter by 0.5 mm thick.

HABITAT

Cultivated fields, roadsides, waste places and especially gardens.

AGRICULTURAL CONCERN

This weed is found on disturbed soils particularly in gardens and around buildings. When growing on fertile soils it can accumulate high levels of nitrates and has caused poisoning of some livestock, especially pigs. It also acts as a host and potential reservoir for the tarnished plant bug which is a pest of many vegetable and ornamental crops.

DESCRIPTION

Annual spreading by seed.

Stems: erect, to 1 m tall, rough, somewhat hairy near tip, usually much branched.

WEEDY NATURE

Leaves: alternate - one per node, 5-10 cm long, to 6 cm wide, oval, with prominent white veins on the undersides, slightly hairy.

Large numbers of seeds are produced some of which can remain viable in the soil for several years.

REDROOT PIGWEED

(*Amaranthus retroflexus* L.)



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NOTES

ARROW-GRASS FAMILY
Juncaginaceae

SEASIDE ARROW-GRASS (*Triglochin maritima* L.)

OTHER NAMES

None known.

ORIGIN

Native.

DESCRIPTION

A creeping rooted perennial that spreads mainly by seed.

Stems: leafless, to 1 m tall, hairless, the flowering portion often more than 1/2 the length of the stem.

Leaves: to 50 cm long, 2-3 mm wide, similar to onion leaves,

ligule — the membranous appendage at the base of the leaf — occasionally shallowly notched to more commonly entire.

Flowers: 1-2 mm wide, greenish, borne individually on short stalks along a central axis, the flower stalks extend below their point of attachment as ridges along the main axis.

Seeds: 3 mm × 0.5 mm × 0.5 mm, 6 per flower, falling off individually leaving a round central axis.

Note: Marsh arrow-grass (*T. palustris* L.), a similar species growing in the same habitats, can be differentiated from seaside arrow-grass by its smaller stature, notched ligule, 3 seeds per flower, and by the wings on the axis of the flower once the seeds have fallen off.

AGRICULTURAL CONCERN

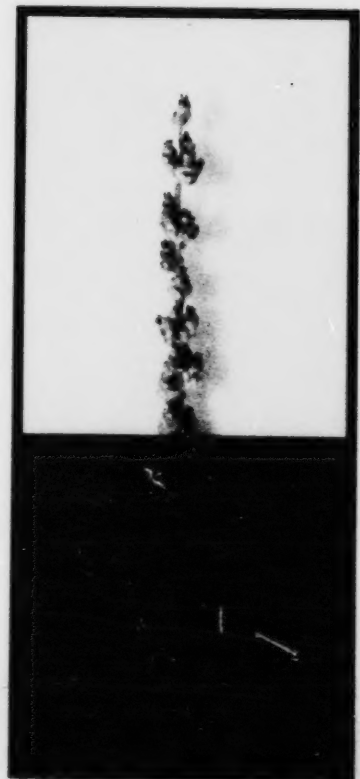
Both seaside and marsh arrow-grass are poisonous due to the presence of the cyanogenic glycoside, triglochinin which releases hydrogen cyanide. The plants are most toxic in the spring once the new growth has appeared. Their toxicity tends to decrease during the summer, however, drought during the growing season can increase the toxicity of the plants. A frost during the growing season can also make the plants more toxic, apparently by making the cyanide in the plants more readily available.

WEEDY NATURE

Not a weed problem.

SEASIDE ARROW-GRASS

(*Triglochin maritima* L.)



NOTES

BEDSTRAW FAMILY

Rubiaceae

CLEAVERS (*Galium aparine* L.)

OTHER NAMES

bedstraw, white hedge, valiant's cleavers, catchweed, scratch grass, grip grass, goose grass, catchweed bedstraw.

ORIGIN

Europe.

HABITAT

It prefers damp, moist soil and is found in cultivated fields, under and around shrubbery, in gardens, lawns and wooded areas.

DESCRIPTION

An annual, reproducing by seed.

Stems: square, with short bristly downward pointing hooks growing on corners, generally trailing in nature and up to 1.5 m long.

Leaves: are produced in whorls on the stem usually in groups of 6 to 8. Leaves

are pointed at the tip, roughened and are 2-5 cm long.

Flowers: are white to creamy in colour, are small and produced in axils of upper leaves.

Fruits are produced in pairs and separate at maturity.

Seeds: grey brown, rough, bristly, 2-3 mm in diameter.

AGRICULTURAL CONCERN

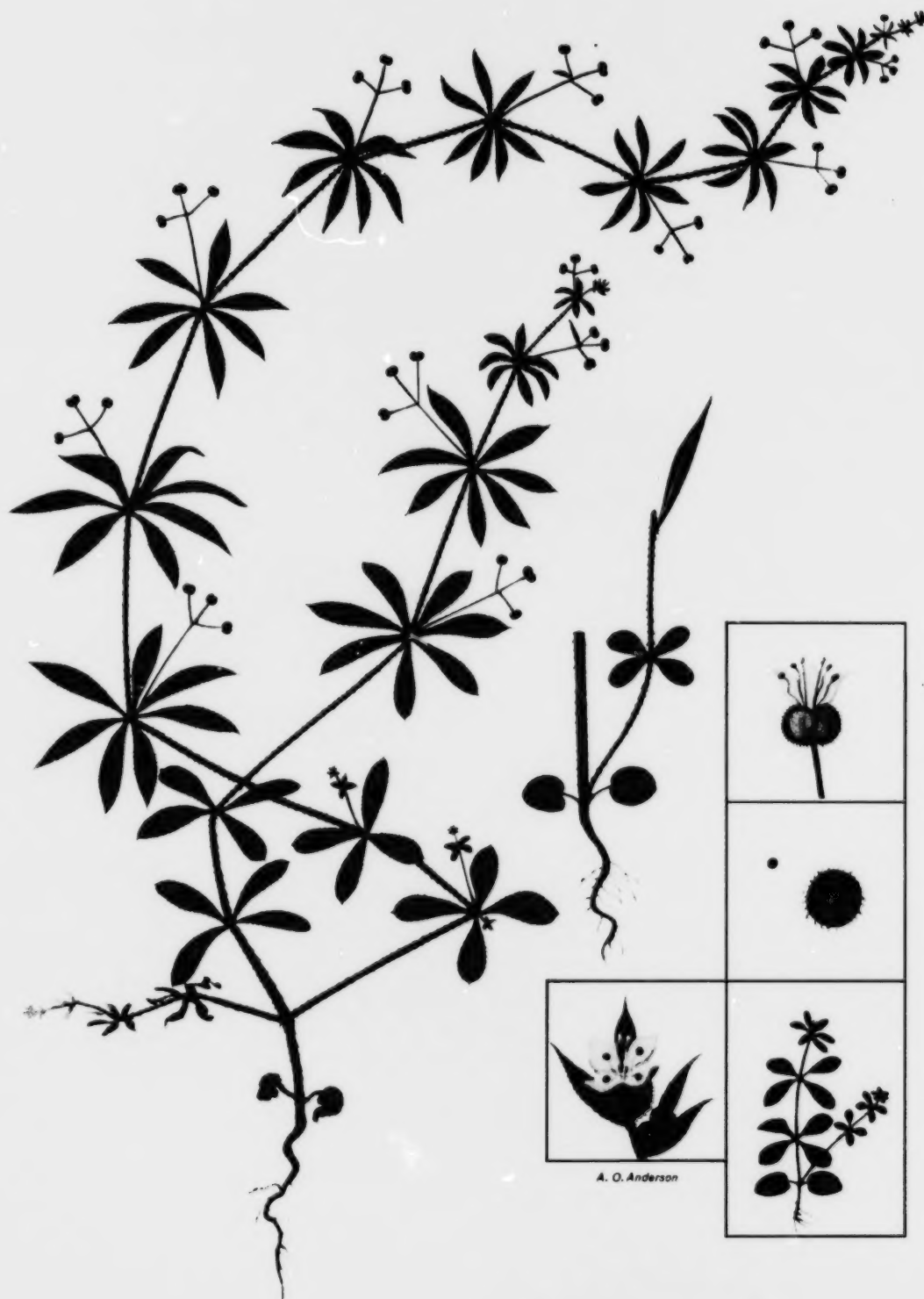
Cleavers' seeds are a serious contaminant in rapeseed because it is not practical to separate them from the rapeseed, and they lower the quality of the oil pressed from contaminated rapeseed. The long trailing stems can make crop handling difficult.

WEEDY NATURE

A prolific seed producer that is easily spread with rapeseed because of the similarity in size and shape of their seeds.

CLEAVERS

(*Galium aparine* L.)



A. O. Anderson

NOTES

BINDWEED FAMILY

Convolvulaceae

FIELD BINDWEED (*Convolvulus arvensis* L.)

OTHER NAMES

European bindweed, small-flowered morning glory, creeping Jenny, European glorybind.

Flowers: bell-shaped or funnel-like, 2-5 cm across, pink or white.

Seeds: triangular, brown to dull black in colour, with a rough surface 4×2.5 mm.

ORIGIN

Europe.

AGRICULTURAL CONCERN

Field bindweed is a very competitive weed that can seriously reduce crop yields, make crop handling difficult and is difficult to control once established.

HABITAT

Infests cultivated and non-cultivated land, in southern Alberta especially.

WEEDY NATURE

DESCRIPTION

Field bindweed is a long-lived, persistent perennial which spreads rapidly by both seeds and creeping roots.

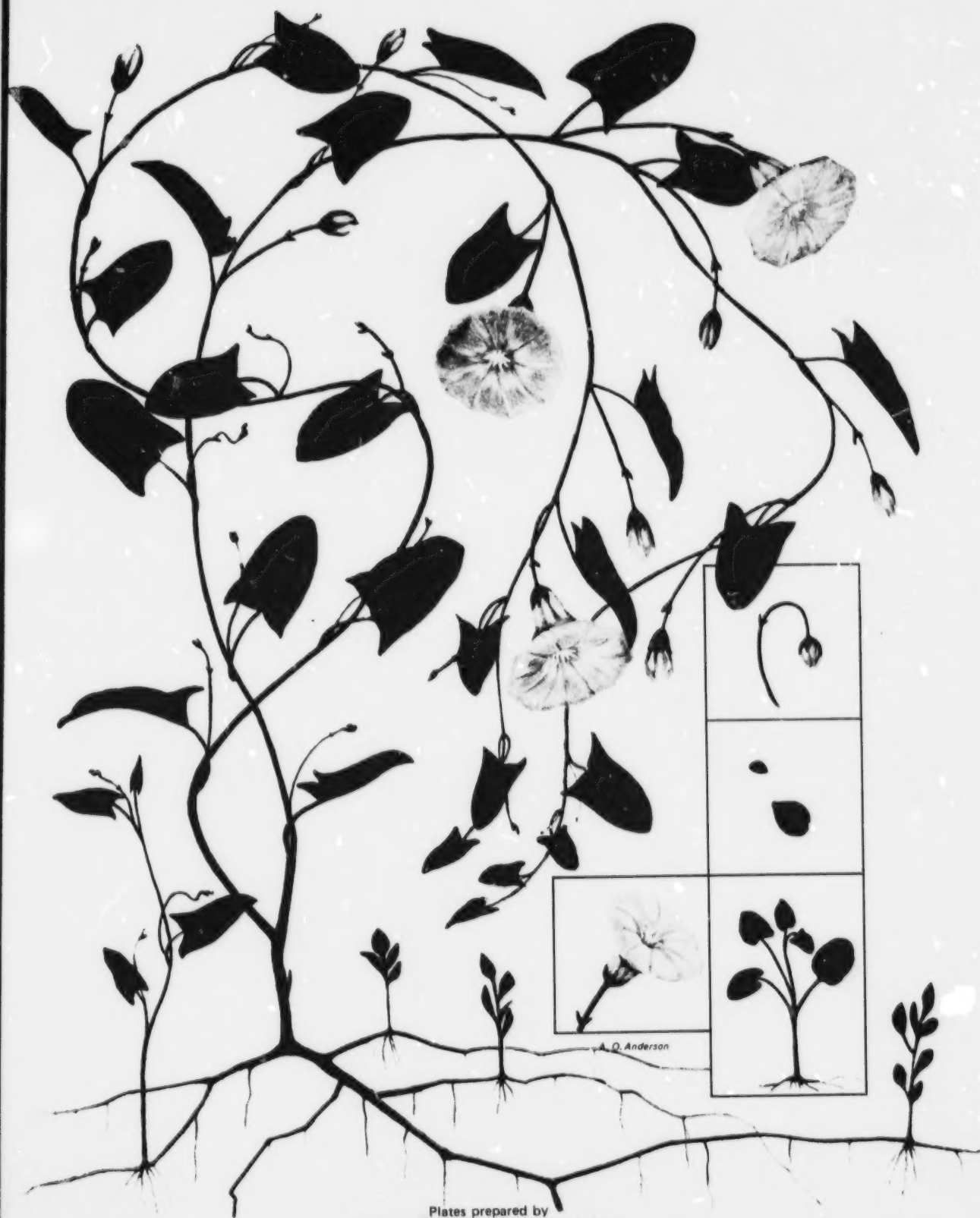
Stems: vine-like, climbs other plants, fences, etc. by twining around them.

Leaves: one per node — alternate, 3-5 cm long $\times$ 1.5 cm wide, shaped like an arrowhead with a rounded point.

Field bindweed has a tremendous ability to survive. The roots can grow to depths of 5 or 6 metres and store a 2-3 year supply of food. It is also a prolific seed producer and much of the seed has a hard seed coat which enables the seed to survive 20-30 years in the soil. This means that an established patch cannot be considered eradicated until many years after the last plant has been killed.

FIELD BINDWEED

(*Convolvulus arvensis* L.)



A. D. Anderson

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NOTES

BLUEBELL FAMILY
Campanulaceae

CREEPING BELLFLOWER (*Campanula rapunculoides* L.)

OTHER NAMES

rover bellflower, creeping campanula.

stalked or stalkless, pointed on both ends, narrower in relation to their length than the root leaves, with some short hairs on the lower surface.

ORIGIN

Europe, Asia.

Flowers: born singly at the bases of the upper leaves, nodding, petals fused into a bell-shaped corolla 3 cm long, blue.

HABITAT

Yards, gardens, waste places.

Seeds: many in a capsule opening by basal pores, $1.5 \times 0.8 \times 0.5$ mm, glossy light brown, with a narrow marginal wing.

DESCRIPTION

A perennial herb spreading by seed and creeping rootstalks.

Stems: erect to 1 m tall, hairless or somewhat hairy in the flowering region, unbranched, in dense patches from creeping rootstalks.

Leaves: root leaves, long stalked, heart-shaped to occasionally broadly oval; stem leaves, alternate — one per node, short

AGRICULTURAL CONCERN

This plant is not yet a problem in cropland, but because of its creeping rootstalk, could become a problem in hay and pasture land.

WEEDY NATURE

Spreads aggressively by means of its creeping rootstalks and tends to take over flower beds and lawns.

CREeping BELLFLOWER

(Campanula rapunculoides)



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NOTES

BORAGE FAMILY
Boraginaceae

BLUEBUR (*Lappula echinata* Gilib.)

OTHER NAMES

stickseed, sheep bur, European sticktight, bur-forget-me-not, stickweed, European stickweed.

ORIGIN

Europe.

HABITAT

Roadsides, waste places, around buildings, and overgrazed ranges.

DESCRIPTION

Annual or winter annual spreading by seed.

Stems: erect, to 60 cm tall, branched at least above, covered with stiff white hairs.

Leaves: basal leaves to 7 cm long and 1 cm wide, narrowed to a short stalk; stem

leaves stalkless, decreasing in size upwards; all leaves with numerous stiff white hairs.

Flowers: blue, 4 mm wide, petals fused into a 5-lobed corolla, sepals fused also.

Seeds: 2.3 mm × 1.2 mm, with a double row of spines around the margin, spines with star-shaped hooks on the end.

AGRICULTURAL CONCERN

Not a major concern to agricultural production. Easily controlled. Could become a problem in special crops where mechanical weeding could be the only method of control.

WEEDY NATURE

A prolific seed producer with seeds that are readily spread on animal hair and clothing because of the hooked spines on the seeds.

BLUEBUR

(*Lappula echinata* Gilib.)



NOTES

BUCKWHEAT FAMILY

Polygonaceae

ANNUAL SMARTWEEDS

OTHER WEEDS

green smartweed — *Polygonum scabrum* Moench, pale persicaria, lady's thumb.

pale smartweed — *Polygonum lapathifolium* L., lady's thumb, pale persicaria, white smartweed.

lady's thumb — *Polygonum persicaria* L. smartweed.

ORIGIN

Pale smartweed is native.
Lady's thumb and green smartweed are naturalized from Europe.

HABITAT

Cultivated fields and waste places, especially where moisture is adequate.

DESCRIPTION

This description is for green smartweed; the plant illustrated here.

Annual, reproducing by seeds only, as are pale smartweed and lady's thumb.

Stems: usually branched, to 80 cm tall, lacking hairs but with sessile glands (appear as small globular lumps on the stem) near the tips.

Leaves: alternate, stalked and tapering towards both ends, widest near the middle, to 8 cm long and 1.5 cm wide. The lower leaves usually have no hairs and are glandularly dotted. Often with a dark blotch in the centre. The base of the leaf stalk gives rise to a papery sheath surrounding the stem. This sheath (the ocrea) is hairless or has hairs visible only under magnification.

Flowers: grouped into dense clusters at the ends of the stems and on short stalks from the bases of the upper leaves, usually green, about 3 mm long.

Seeds: rounded, shiny black or dark brown, 2.5-3.5 mm long, 2.3-2.8 mm wide and 1 mm thick, with a sharp point at the tip.

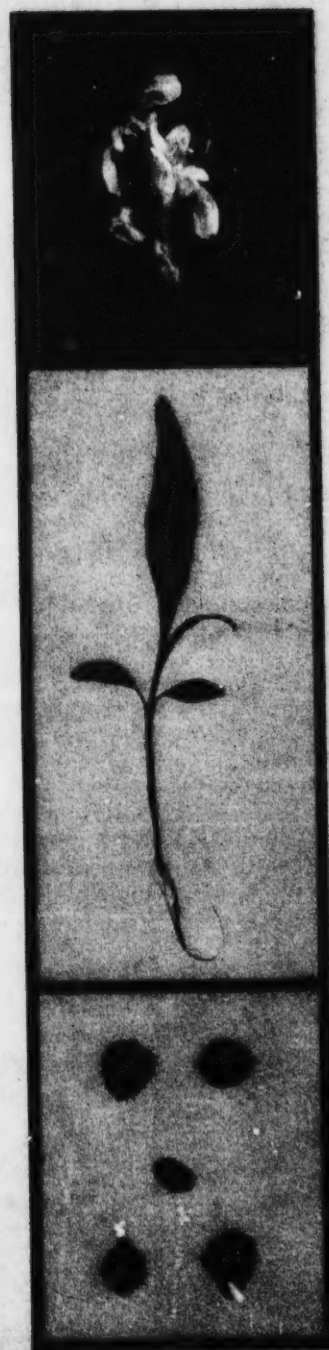
Notes: Green smartweed is difficult to separate from pale smartweed and lady's thumb, and there is usually very little need to do so since control measures are the same for all 3 species.

AGRICULTURAL CONCERN

The smartweeds are resistant to 2,4-D and MCPA, and have become a problem since the widespread use of these chemicals has reduced competition from other weeds. They can cause yield reductions due to competition with the crop and because the large plants take a long time to dry in the swath, can delay harvesting.

GREEN SMARTWEED

(*Polygonum scabrum* Moench)



TARTARY BUCKWHEAT

(*Fagopyrum tataricum* [L.] J. Gaertn.)

OTHER NAMES

Tatarian buckwheat, Tartarian buckwheat.

ORIGIN

Introduced from Asia.

HABITAT

Cultivated fields, disturbed ground, waste places.

DESCRIPTION

Annual plants spreading by seed.

Stems: erect, 10-80 cm tall.

Leaves: alternate, triangularly heart-shaped, to 8 cm long by 8 cm wide, stalked, with the base of the leaf stalk giving rise to a papery sheath around the stem.

Flowers: less than 5 mm in diameter, greenish white with 5 lobes, in stalked clusters from the bases of the upper leaf stalks.

Seeds: triangular in cross section, about 6 mm long and 4 mm wide, dull grey-brown, distinctive because of the wrinkled and notched angles.

AGRICULTURAL CONCERN

Seeds of Tartary buckwheat in commercial grades of wheat will darken the flour. In malting barley, they adversely affect the malt. Top grades of oats cannot be used for rolling or preparation of any processed product if they contain Tartary buckwheat seeds.

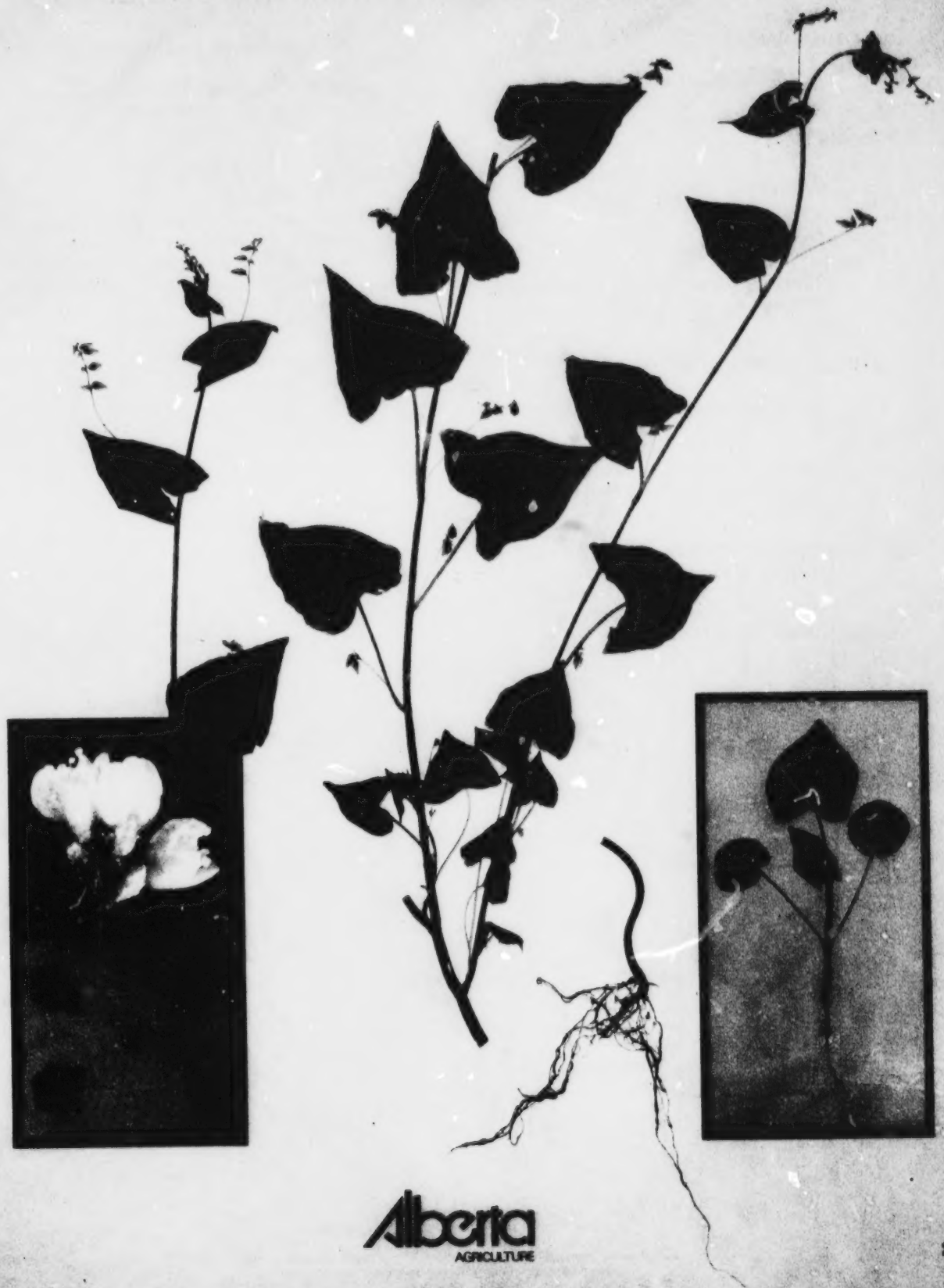
The seeds of Tartary buckwheat are difficult to separate from cereals, because they are a similar size and weight, and as a result, grain will be downgraded if Tartary buckwheat seeds are present.

WEEDY NATURE

This is a prolific seed-producing annual weed. Individual plants start producing seed in early summer and continue to produce seed until killed by frost in the fall. The seeds have an after-ripening requirement and will not germinate immediately. This period varies in length so the soil will contain seeds which are ready to germinate, seeds which are dormant and seeds at all stages in between. This makes control difficult because new plants can start growing throughout the growing season.

TARTARY BUCKWHEAT

(*Fagopyrum tataricum* (L.) J. Gaertn.)



WILD BUCKWHEAT (*Polygonum convolvulus* L.)

OTHER NAMES

black bindweed, dullseed cornbind.

Flowers: small, greenish and drooping.

Seeds: three-sided with sharp angles, 3 mm long by 2 mm wide, dull black colour.

ORIGIN

Europe.

AGRICULTURAL CONCERN

Wild buckwheat is a problem weed in many crops. It has increased mainly because it is resistant to 2,4-D. As the use of 2,4-D became widespread, less attention was paid to other methods of weed control and wild buckwheat increased.

HABITAT

Cultivated fields, gardens, roadsides, any disturbed ground.

In addition to crop competition, wild buckwheat causes problems because of its vine-like growth habit. It tangles in equipment (particularly at harvest) and causes plugging and pick-up losses. The seeds are quite large and often are found in cereal grain.

DESCRIPTION

An annual, tap-rooted weed spreading by seed.

Stems: weak and twining, growing along the ground or climbing over other plants, fences, rocks.

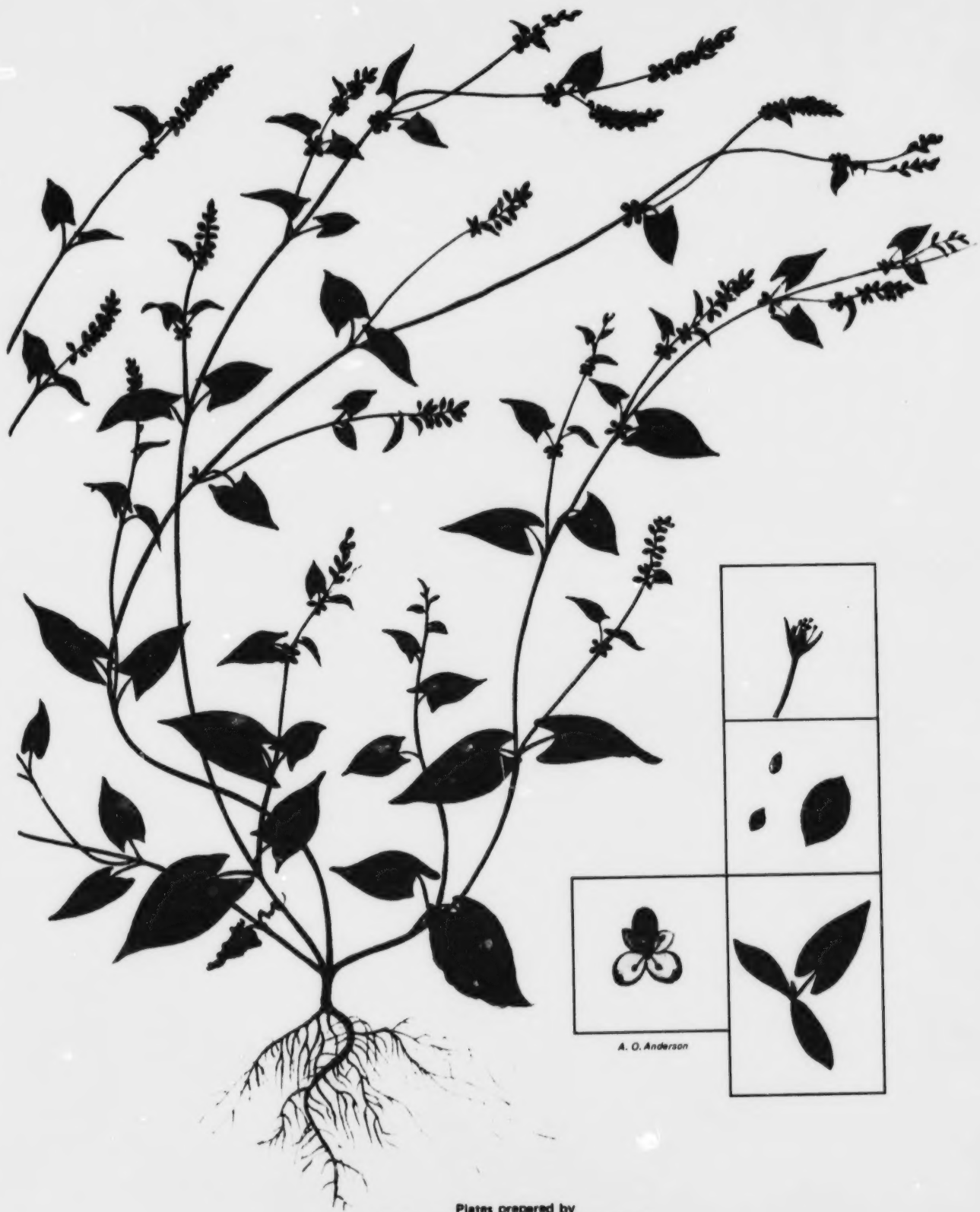
Leaves: alternate — one per node, heart-shaped, green to olive in colour, stalked and 2 to 5 cm long, the base of the leaf stalk gives rise to a papery sheath surrounding the stem.

WEEDY NATURE

Wild buckwheat propagates only by seed. It is probably quite often spread by the use of uncleaned or improperly cleaned seed.

WILD BUCKWHEAT

(*Polygonum convolvulus* L.)



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NOTES

CARROT FAMILY
Umbelliferae

WATER-PARSNIP (*Sium suave* Walt.)

OTHER NAMES

hemlock water-parsnip.

ORIGIN

Native.

HABITAT

Marshes, streambanks, slough margins, and other wet places.

DESCRIPTION

perennial reproducing by seeds.

Stems: solitary from the crown, ribbed, 0.5-1.2 m tall. Differs from water hemlock in the stem ribbing, lacks the swollen horizontally chambered base and has many fibrous roots in contrast to the tuberous roots of water hemlock.

Leaves: alternate — one per node — stalked, once compound — the central

stalk bearing 5-13 stalkless leaflets; leaflets 2-9 cm long and 1.5-10 (occasionally 20) mm wide, with serrated edges, primary lateral veins branched and not tending towards the notches of the leaf serrations as the lateral veins of water hemlock leaflets do.

Flowers: numerous, small white, grouped into compound, dill-like umbels, primary whorl or branches with an involucre of 6-10 narrow bracts 3-15 mm long, secondary whorls of branches with 4-8 bractlets 1-3 mm long.

Seeds: two per flower, 2-3 mm long, hairless, with broad-corky longitudinal ribs.

AGRICULTURAL CONCERN

This plant is suspected of being poisonous, however, it is included because it is often confused with water hemlock.

WEEDY NATURE

Not a weed problem.

WATER PARSNIP

(*Sium suave* Walt.)



WESTERN WATER-HEMLOCK

(*Cicuta douglasii* [DC.] Coult. and Rose)

OTHER NAMES

cowbane, poison parsnip, wild parsnip, snake root, snakeweed, spotted hemlock, spotted cowbane, false parsley, poison hemlock, spotted parsley, carotte a moreau, Douglas water-hemlock.

ORIGIN

Native.

HABITAT

Marshes, streambanks, slough margins and other wet places.

DESCRIPTION

Perennial reproducing by seed.

Stems: 0.5-1.5 m tall, often with purplish spots, the base is somewhat swollen and divided into narrow chambers by horizontal crosswalls and has several tuberos thickened roots.

Leaves: alternate — one per node, stalked and twice pinnately compound — the main leaf stalk has secondary leaf stalks each bearing from one to several leaflets; leaflets 3-10 cm long and 0.6-3.5 cm wide with serrated edges, the main lateral veins in the leaflets tend to go towards the bases of notches, in other similar plants in the Umbelliferae family the lateral veins tend to go towards the ends of the teeth or they bear no relationship to the serrations on the margins of the leaflets.

Flowers: numerous, small, white or occasionally greenish, grouped into a compound dill-like umbel, the primary whorl of branches lacks bracts or occasionally has a few inconspicuous ones, the second-

ary whorls of branches have a series of narrow bracts around the base of the whorl of branches.

Seeds: two per flower, 2-4 mm long, with corky thickened ribs that are wider than the intervals.

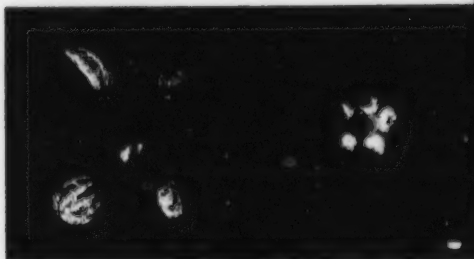
Note: Two other species of *Cicuta* are also found in Alberta. They are *C. bulbifera* L., bulbous water hemlock and *C. mackenzieana* Raup., Mackenzie water hemlock. *C. mackenzieana* differs from western water hemlock in the size and shape of the fruits, the length of the umbel branches, and in its distribution — it is found only in the northern half of the province while western water hemlock is found throughout the province. From a practical point of view these differences are not important as both species are extremely poisonous. *C. bulbifera* has very narrow leaflets, less than 5 mm wide, and usually has bulbils at the base of the leaflets of the upper leaves. This species is also extremely toxic, but it is rare in Alberta.

AGRICULTURAL CONCERN

Species of *Cicuta* are among the most toxic plants of the north temperate zone and are probably the most toxic plants growing in Alberta. The roots and stem bases are the most toxic parts of the plant. The roots of one water hemlock plant contain enough toxin to kill a mature cow. Water Hemlock is also extremely poisonous to people.

WEEDY NATURE

Water hemlock is not a weed problem but has been included because it is one of the major causes of livestock poisoning in Alberta.



NOTES

CROWFOOT FAMILY

Ranunculaceae

LOW LARKSPUR (*Delphinium bicolor* Nutt.)

OTHER NAMES

little larkspur.

ORIGIN

Native.

HABITAT

Moist grasslands and open forests in southern Alberta.

DESCRIPTION

A perennial, growing from fibrous to somewhat fleshy roots, that spreads by seed.

Stems: normally unbranched, solid, to 50 cm tall, almost hairless to covered with short hairs, usually with yellowish glands.

Leaves: mostly basal, few in number, long stalked, circular in outline, 3-6 cm in diameter, divided into narrow segments, hairless or nearly so.

Flowers: borne singly on stalks 10-30 mm long, sepals dark blue, hairy, the upper one with a backward pointing spur longer than its blade, 15-25 mm long, petals in two pairs, the lower pair deep blue, shal-

lowly lobed to wavy margined, the upper pair light blue with purple lines.

Seeds: blackish, 2 mm long, irregularly angled with greyish wings on the angles; several in capsules 15-25 mm long.

Note: Nuttall's larkspur (*Delphinium nuttallianum* Pritz.) a similar species also found in southern Alberta can be separated from low larkspur because it is weakly attached to its tuberous roots while low larkspur is strongly attached to its fibrous roots.

AGRICULTURAL CONCERN

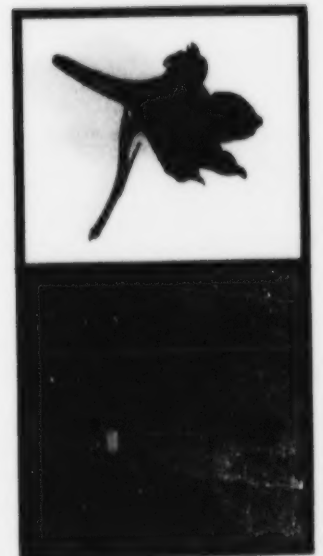
Low larkspur is especially dangerous to cattle because it is relatively palatable and they will often continue eating it until the lethal dose is consumed. While both sheep and horses have been poisoned experimentally, under range conditions horses do not normally eat enough to cause poisoning and sheep appear to be able to eat it with no ill effects most of the time. It is most dangerous in May and June since it starts growth early in the spring and by mid July has normally stopped growing for the season and no longer presents a hazard to livestock.

WEEDY NATURE

Not a weed problem.

LOW LARKSPUR

(*Delphinium bicolor* Nutt.)



TALL LARKSPUR (*Delphinium glaucum* S. Wats.)

OTHER NAMES

Sierra larkspur.

ORIGIN

Native.

HABITAT

Aspen and willow forests of western and northern Alberta.

DESCRIPTION

Perennial, spreading by seed.

Stems: erect, 1-2 m tall, branched, hollow, hairless except sometimes sparsely hairy among the flowers, often with a bluish waxy bloom, usually several from the root stalk.

Leaves: numerous, one per node, the lower ones to about 20 cm broad, gradually reduced up the stem, divided about $\frac{3}{4}$ of their length into 5 or occasionally 7 wedge-shaped segments, the segments shallowly 2 or 3 lobed or toothed, hairless or somewhat hairy on the margin and lower surface.

Flowers: borne singly on short stalks along the main central axis; sepals dark blue, sparsely to densely hairy, 6-12 mm long, the upper one with a spur forming about $\frac{1}{2}$ the length of the flower; petals pale blue, 4, in pairs, one pair attached above the ovary and the other pair attached below the ovary.

Seeds: 3 mm long, brownish-purple, irregularly shaped, winged on the angles, enclosed in rather woody capsules.

AGRICULTURAL CONCERN

This plant is poisonous, especially to cattle. While both sheep and horses have been poisoned experimentally, under range conditions horses rarely eat enough to cause symptoms and sheep appear to be able to eat it with impunity most of the time. Larkspur is particularly dangerous to cattle because it is quite palatable and they will continue to eat it until a lethal dose is consumed. It is most toxic in the spring and the toxicity gradually declines as the season progresses. It is normally non-toxic by mid August and cattle can feed on it without danger.

WEEDY NATURE

It is not a weed problem.

TALL LARKSPUR

(*Delphinium glaucum* Wats.)



NOTES

FIGWORT FAMILY

(Snapdragon Family)

Scrophulariaceae

TOADFLAX (*Linaria vulgaris* Mill.)

OTHER NAMES

butter-and-eggs, wild snapdragon, yellow toadflax, flaxweed, ramsted, eggs-and-bacon, perennial snapdragon.

ORIGIN

Eurasia.

HABITAT

Roadsides, pastureland and waste places.

DESCRIPTION

Perennial spreading by creeping roots and by seed.

Stems: to 80 cm tall, hairless, green, unbranched or nearly so.

Leaves: numerous, one per node, essentially stalkless, 2-10 cm long by 1-5 mm wide, hairless, usually narrowed towards the base.

Flowers: snapdragon-like, 2-3.5 cm long, bright yellow, on stalks about 5 mm long, a backward pointing spur forms about 1/2 the length of the flower.

Seeds: 1.7 mm in diameter by 0.3 mm thick, with a winged margin, dull black.

Note: Dalmation toadflax (*Linaria dalmatica* [L.] Mill.) is a species with a similar growth-form and flowers. It is easily recognized by its broader and shorter leaves which clasp the stem.

AGRICULTURAL CONCERN

Toadflax is an escaped ornamental which invades rangeland, mountain meadows and waste areas. It was once considered a serious weed in cultivated land, however, current tillage and chemical control practices have reduced its impact in this area.

WEEDY NATURE

The prolific production of strongly winged, readily dispersed seeds and tenacious creeping root system make toadflax a potential menace in non-cropped areas and poorly tilled soils.

TOADFLAX

(*Linaria vulgaris* Mill.)



NOTES

GERANIUM FAMILY
Geraniaceae

STORK'S-BILL (*Erodium cicutarium* [L.] L'Her.)

OTHER NAMES

pin-clover, alfileria, red stem filaree.

ORIGIN

Naturalized from Europe.

HABITAT

Fields, roadsides, waste places.

DESCRIPTION

Annual, winter annual or biennial, spreading by seeds only.

Stems: low and spreading, to 40 cm tall, with few leaves.

Leaves: mostly basal, divided into leaflets; the leaflets lack stalks, are irregularly divided into segments and more or less covered with short, stiff hairs.

Flowers: about 15 mm in diameter with 5 pink to purple petals and 5 green sepals, slightly shorter than the petals, with a bristle tip.

Seeds: about 5 mm long with a 2-3 cm long tail that is helically coiled when dry.

AGRICULTURAL CONCERN

Has the capacity to reduce yields, may be difficult to separate from some seed and is difficult to control.

STORK'S BILL

(*Erodium cicutarium* (L.) L'Her.)



NOTES

GOOSEFOOT FAMILY

Chenopodiaceae

KOCHIA (*Kochia scoparia* [L.] Schrad.)

OTHER NAMES

summer cypress, mock cypress, burning bush, red belvedere, Mexican fireweed.

ORIGIN

Eurasia, some forms grown as ornamentals.

HABITAT

Waste places, roadsides and cultivated fields; especially on saline soils.

DESCRIPTION

Annual reproducing by seeds.

Stems: erect, 0.5-1.5 cm tall, freely branching, varies from densely covered with long, soft hairs to almost hairless, usually reddish tinged by fall.

Leaves: smooth margined, 2-5 mm wide, up to 6 cm long, linear to narrowly oval in

shape, stalkless, usually with long hairs on the underside and along the margins, normally hairless on the upper surface.

Flowers: small, stalkless, lacking petals, in clusters of 2-6 at the bases of leaf-like bracts, sepals normally with long hairs.

Seeds: often enclosed by the calyx which has a broad horizontal wing on the back of each lobe, one per flower, 1-1.5 mm long, dull brown, egg-shaped in outline, flattened with a broad groove on both sides.

AGRICULTURAL CONCERN

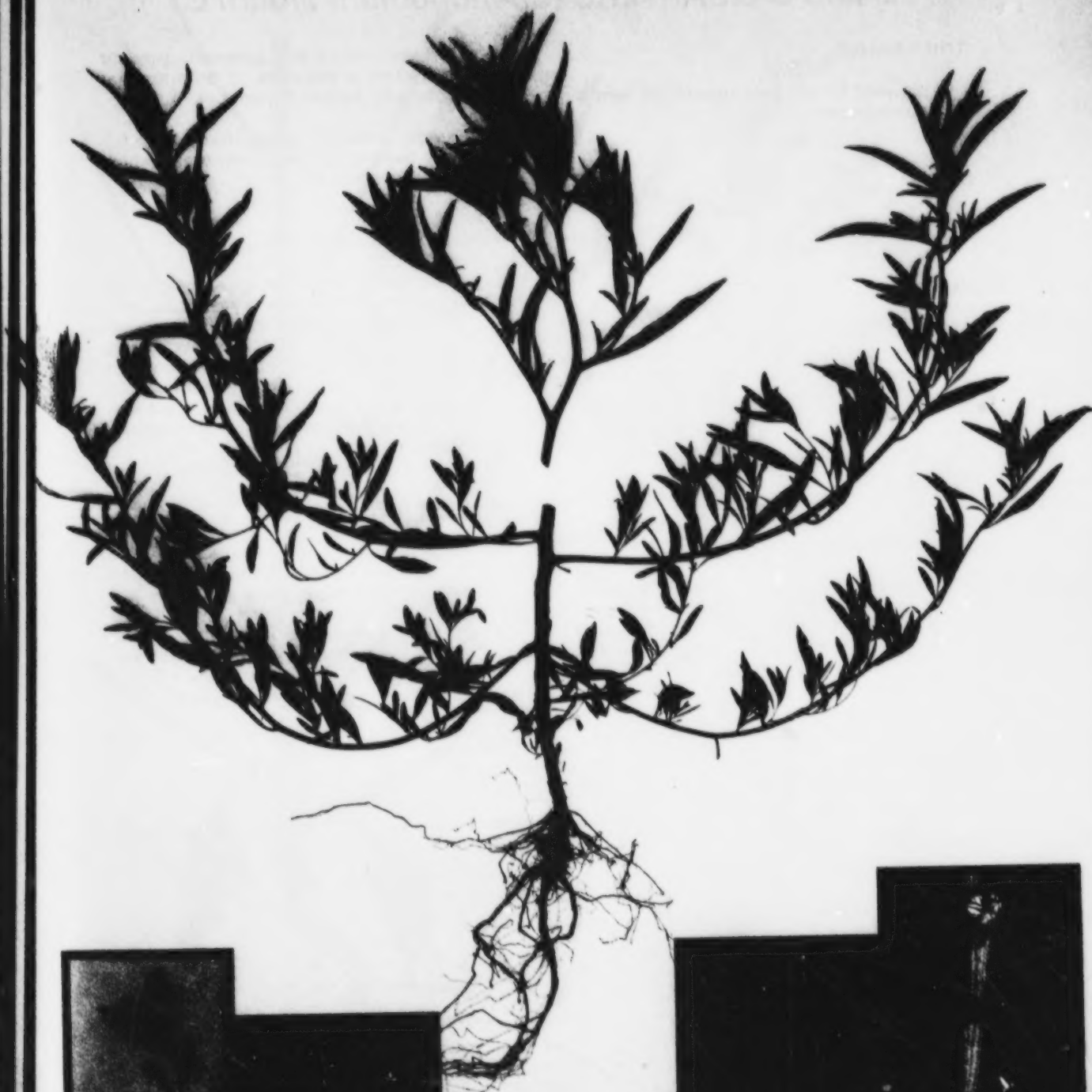
Kochia is no longer on the weed list since it has been found useful for growing on saline soils to reduce salinity, however, if it is found growing in field crops it can be a serious problem.

WEEDY NATURE

A prolific seed producer that spreads rapidly by seed, particularly on alkaline soils.

KOCHIA

(*Kochia scoparia* (L.) Schrad.)



LAMB'S-QUARTERS (*Chenopodium album* L.)

OTHER NAMES

pigweed, fat-hen, white goosefoot, lamb's-quarters goosefoot.

ORIGIN

Europe.

HABITAT

This weed is one of the commonest and most widespread in western Canada. It grows anywhere that disturbed soil may be found; roadsides, yards, cultivated fields, etc.

DESCRIPTION

Stem: erect, grooved, many-branched, sometimes growing as tall as 2 m.

Leaves: stalked, alternate, the lower side of the leaf is pale in colour and covered with greyish-green mealy particles, 2-10 cm long, from narrow and almost entire margined to broader and coarsely toothed.

Flowers: small and greenish, growing in clusters at the stem tip or in the leaf axils from June to September.

Seeds: smooth, glossy black, 1.2×0.5 mm, covered by a dull membrane which is easily removed.

AGRICULTURAL CONCERN

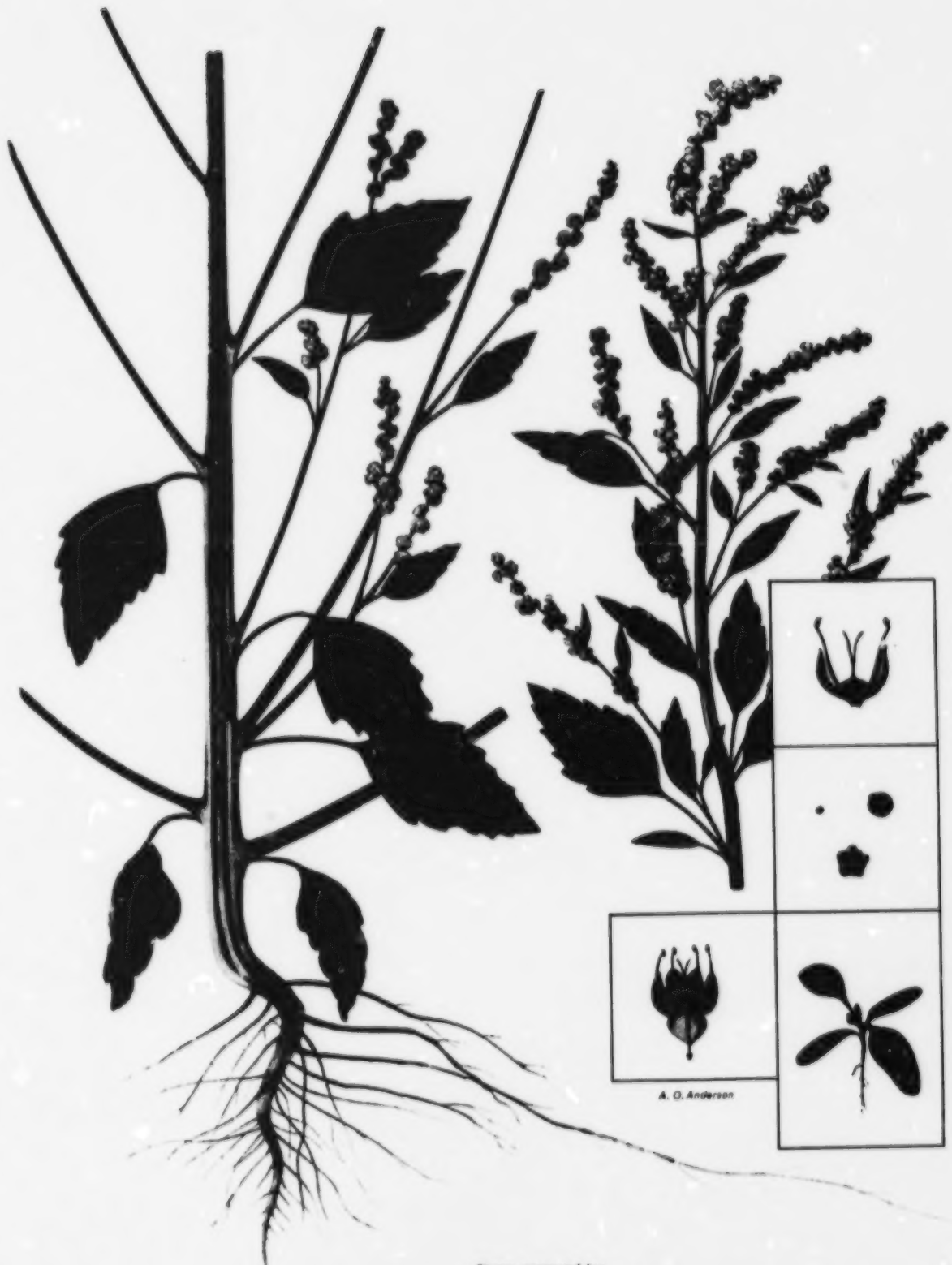
Lamb's-quarters is not considered to be the problem it was some years ago, simply because it is easily controlled in cereal crops by means of herbicides. Despite this ease of control, it remains a very common weed and is responsible for competition losses before spraying occurs. It is a nuisance weed in gardens and horticultural crops.

WEEDY NATURE

Lamb's-quarters spreads solely by seed which is produced in prolific quantity. Left uncontrolled, it can grow so thick that it crowds out other growth. As many as 70,000+ seeds may be produced on a single plant. These seeds possess varying degrees of dormancy in the soil and can remain viable for many years.

LAMB'S-QUARTERS

(*Chenopodium album* L.)



A. O. Anderson

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RUSSIAN THISTLE (*Salsola kali* L. var. *tenuifolia* Tausch)

OTHER NAMES

Russian tumbleweed, Russian cactus, tumbling Russian thistle.

ORIGIN

Eurasia.

HABITAT

Cultivated fields, roadsides, waste places, along railway tracks, and fence lines. More common on dry soils in southern parts of Alberta but occasionally occurs on south-facing slopes north of its normal range.

DESCRIPTION

Annual, spreading by seeds.

Stems: to 1.2 m tall, much branched, usually spreading as much or more horizontally as vertically, often with reddish stripes.

Leaves: 2-5 cm long, alternate — one per node, early leaves dark green and

thread-like; later leaves shorter and broader, fleshy, sharp pointed and flattened on the lower side.

Flowers: small and inconspicuous, borne where the upper leaves join the stems, green or pinkish in colour, lacking petals, 2 mm wide.

Seeds: 2 mm in diameter, one per flower, dull brownish colour, with a spiral groove showing the location of the coiled embryo.

AGRICULTURAL CONCERN

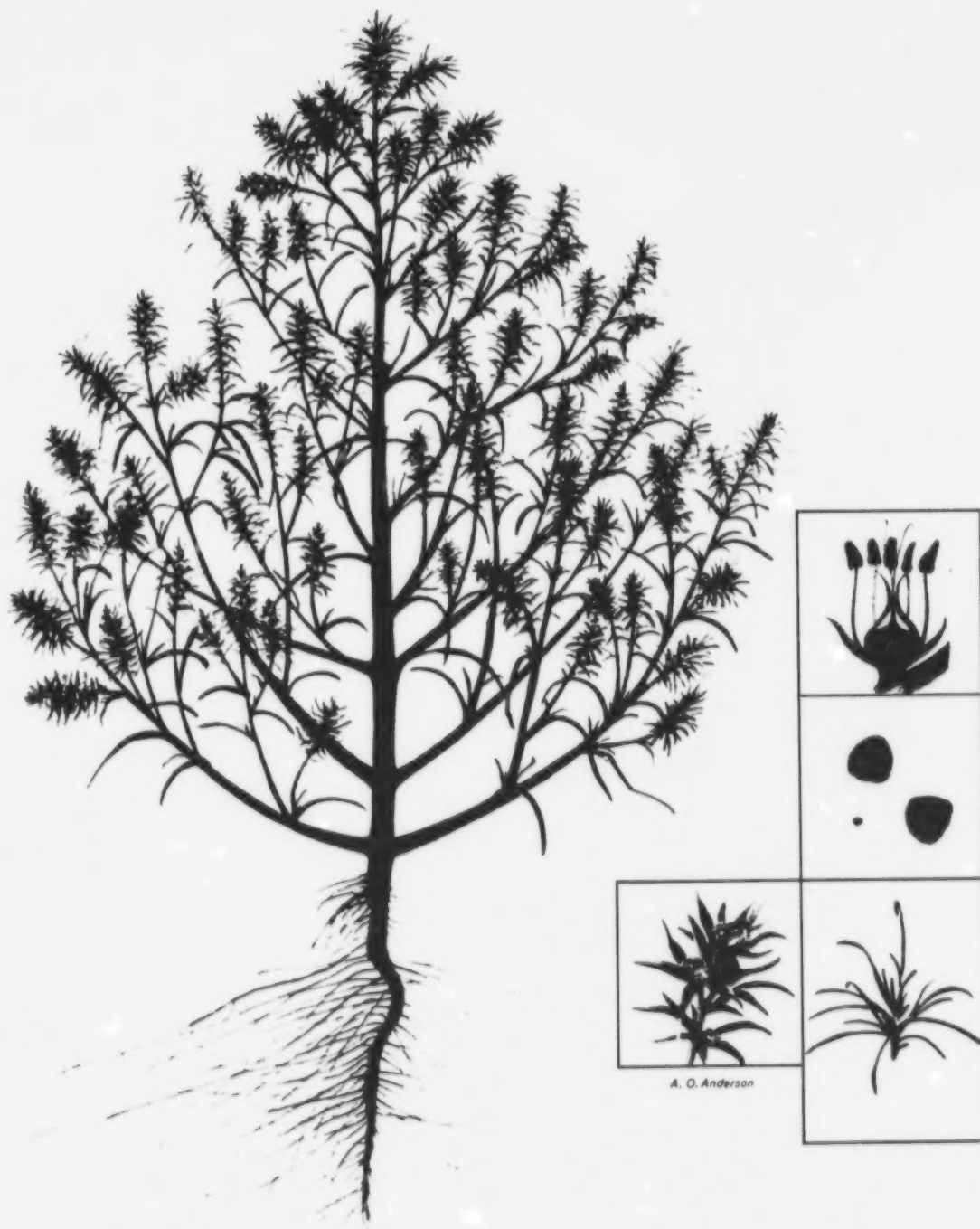
Russian thistle is a high user of nitrogen that can compete with crops in the south-east part of Alberta. The dried tops of the plants can be a nuisance by getting caught in fences and hedges.

WEEDY NATURE

Russian thistle is a prolific seed producer and once the plant matures it dries out and breaks off at ground level and acts as a tumbleweed, rolling along with the wind spreading seed as it travels.

RUSSIAN THISTLE

(*Salsola Kali* L. var. *tenuifolia* Tausch)



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NOTES

GRASS FAMILY

Gramineae

BARNYARD GRASS (*Echinochloa crusgalli* [L.] Beauv.)

OTHER NAMES

cockspur grass — races native to North America are often referred to as a separate species *E. pungens* (Poir.) Rydb., prickly barnyard grass.

ORIGIN

Some races are native while others were introduced from Europe.

HABITAT

Waste areas, gardens and cultivated ground, especially areas where moisture is adequate such as irrigation ditch banks.

DESCRIPTION

Annual reproducing by seeds.

Stems: erect to horizontally spreading, simple or branched at the base, up to 1.5 m long, hairless, round and hollow with swollen nodes.

Leaves: 0.5-2 cm wide, hairless; unique among Alberta grasses because the ligule is absent.

Inflorescence: a much branched panicle, with the spikelets on short branches, and with several spreading spike-like branches; 5-45 cm long.

Seeds: one per spikelet tightly enclosed in the smooth, hardened lemma and palea so the actual seed itself is rarely seen; about 2 mm long, each seed also loosely covered by 3 additional flowering scales (1 sterile lemma and 2 glumes), sterile lemma and one glume with scattered stiff hairs and the sterile lemma often with an awn up to 30 mm long, the other glume relatively short and inconspicuous.

AGRICULTURAL CONCERN

May become a pest of row crops such as corn, sugar beets or some vegetable crops. A common garden weed.

WEEDY NATURE

A prolific seed producer that can spread rapidly by seed.

BARNYARD GRASS

(*Echinochloa crusgalli* (L.) Beauv.)



DOWNY BROME (*Bromus tectorum* L.)

OTHER NAMES

downy chess, early chess, cheatgrass.

ORIGIN

Europe.

HABITAT

Roadsides, waste areas, disturbed ground, dry overgrazed pastures.

DESCRIPTION

Annual or winter annual reproducing by seed, starting growth early in the spring and usually drying by mid-summer.

Stems: 20-50 cm tall, round and hollow with swollen nodes, more or less covered with soft-straight hairs.

Leaves: blades flat 2-4 mm wide, more or less covered with soft, straight hairs,

ligules 1-3 mm long with a ragged edge.

Inflorescence: much-branched (panicle) with the spikelets at the ends of long and usually drooping branches, 10-20 cm long.

Seeds: grouped in spikelets with 5-9 seeds per spikelet, each seed is covered by a scale (lemma) that has 3-8 mm long awn and is usually covered with hairs at least on the lower half of the lemma.

AGRICULTURAL CONCERN

The panicles and spikelets break up and when eaten by stock the sharp florets with their rough awns work between the teeth and gums of the feeding animal and may also get in their eyes or nostrils or even perforate the intestines.

WEEDY NATURE

Prolific seed producer that can rapidly spread by seed.

DOWNY BROME

(*Bromus tectorum* L.)



FOXTAIL BARLEY (*Hordeum jubatum* L.)

OTHER NAMES

wild barley, foxtail.

ORIGIN

Native to Alberta and most of North America.

HABITAT

Disturbed ground, waste places and moist depressions where soil is slightly saline or alkaline.

DESCRIPTION

Tufted perennial reproducing by seed.

Stems: typical round hollow grass stems with swollen nodes, 30-70 cm tall.

Leaves: greyish-green, rough, less than 5 mm wide, often rolled towards the upper surface, especially when dry or partially dry, ligule is membranous and less than 1 mm long, leaf sheath split.

Inflorescence: spike 5-12 cm long, usually nodding, easily recognized by the "foxtail" of long awns which are greenish or purplish in colour and fading to straw coloured or almost white as they mature, breaks up into individual seeds along the main axis when mature.

Seeds: about 3-4 mm long, each with 4-8 awns 3-6 cm long. They have a sharp point near the base with minute barbs pointing away from the point so the seed acts like a porcupine quill.

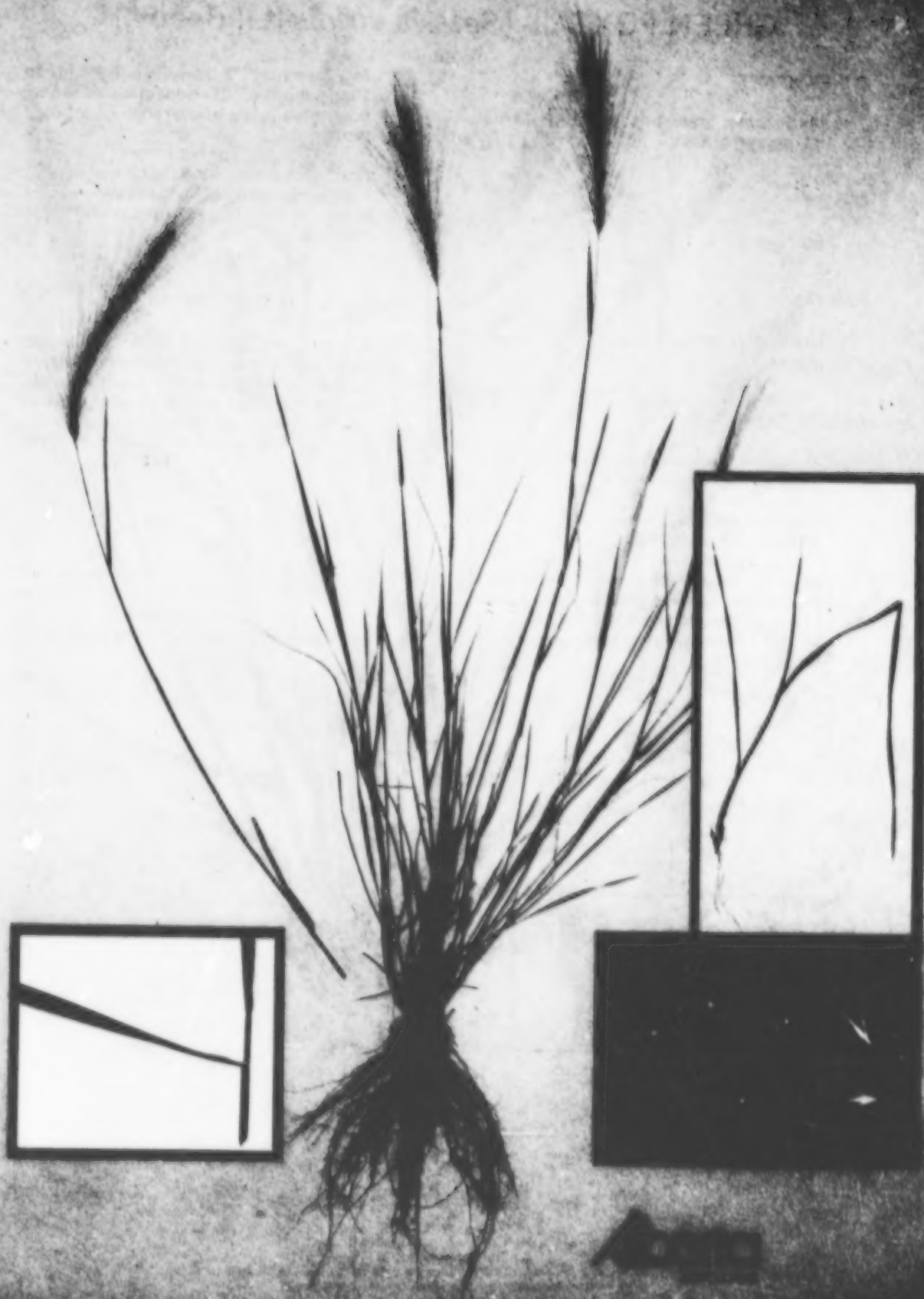
AGRICULTURAL CONCERN

Lower quality of hay and pasture sometimes causing mouth, eye or skin irritation to grazing animals.

WEEDY NATURE

Prolific seed producer; because of the long awns the seeds are readily spread by wind and can become established in freshly seeded pastures and hay land and cause the pasture or hay to be unpalatable because of the seeds.

FOXTAIL BARLEY
(*Hordeum jubatum* L.)



GREEN FOXTAIL (*Setaria viridis* [L.] Beauv.)

OTHER NAMES

bottle grass, green bristle grass, wild millet, pigeon grass.

ORIGIN

Europe.

HABITAT

Grain fields, gardens, roadsides and waste places.

DESCRIPTION

An annual grass with a tufted growth habit that reproduces by seed.

Stems: erect to 1 m tall, usually less in Alberta, several from the base of the plant.

Leaves: the sheath clasping the stem is smooth and hairless, the ligule at the base of the leaf blade is a fringe of hairs, the blade is flat to 15 mm wide and 25 cm long.

Inflorescence: a spike-like panicle, to 10 cm long, the 1-3 bristles attached to each floret give it the appearance of a bottle brush.

Seeds: 1.5 mm long, hard hulled, hull lightly wrinkled, colour yellow or grey brown to occasionally purple and often mottled.

AGRICULTURAL CONCERN

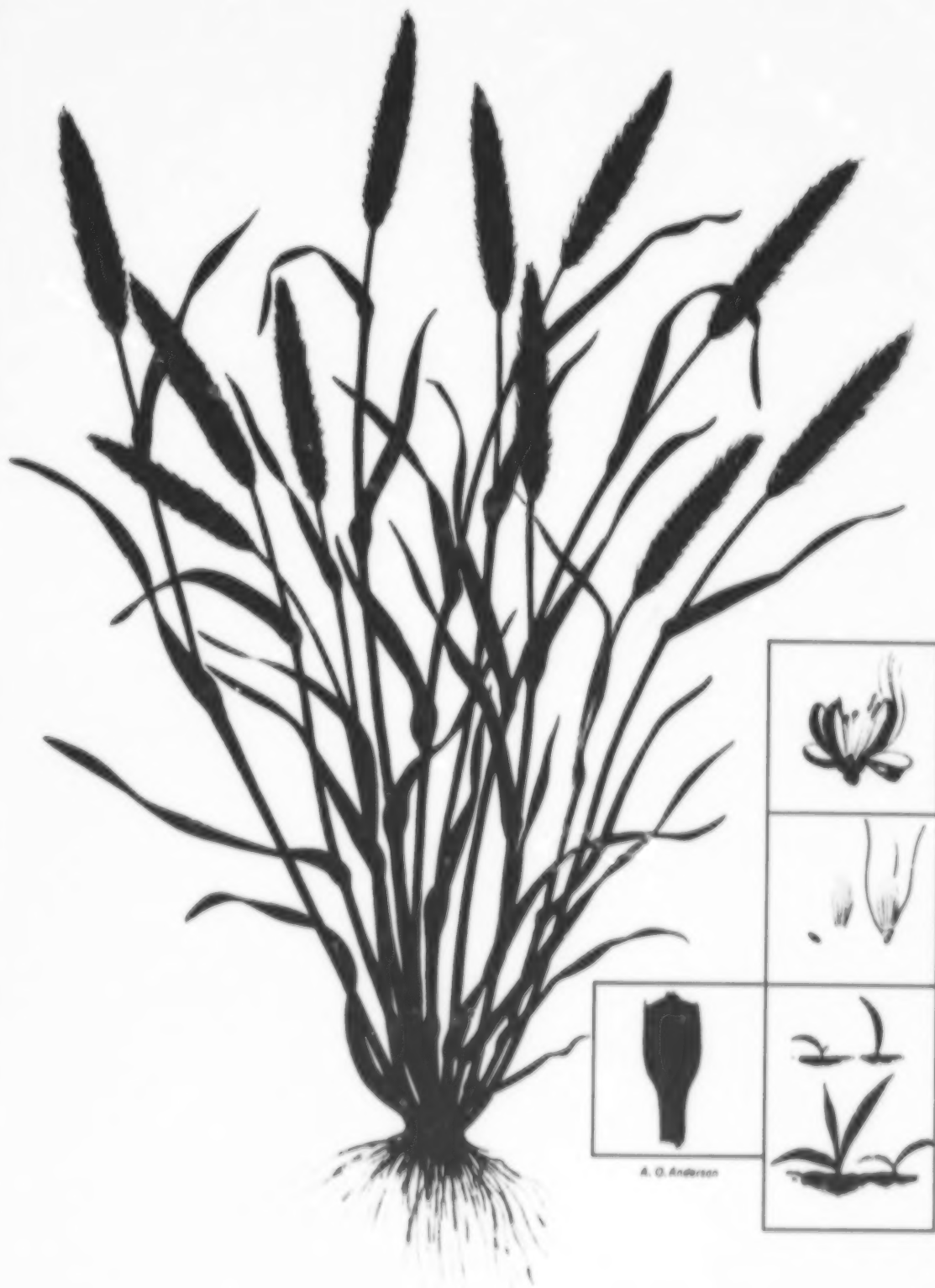
The seed is a common impurity in clover seed where it reduces the grade substantially. The small seeds are readily spread with the chaff by combines so that small patches are rarely found in cereal fields. Infestations of green foxtail usually cover entire fields.

WEEDY NATURE

A prolific seed producer. The seeds will germinate all summer whenever moisture and temperature conditions permit. The plants are capable of producing seed within 6-8 weeks of germination.

GREEN FOXTAIL

(*Setaria viridis* (L.) Beauv.)



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PERSIAN DARNEL (*Lolium persicum* Boiss. & Hohen.)

OTHER NAMES

None known.

Leaves: about 6 mm wide, rough on margins and upper nerves, lower surface smooth and glossy.

Inflorescence: spikelike, usually $\frac{1}{4}$ - $\frac{1}{2}$ the length of the stem, spikelets placed edgewise on the stalk.

ORIGIN

Asia.

Seeds: resemble wheat grass seeds, but smaller and have an awn at the tip about as long as the kernel and often slightly bent.

HABITAT

Grain fields, particularly in the drier areas.

AGRICULTURAL CONCERN

Reduced yields in cereals and oilseed crops. Difficult to control with normal control procedures.

DESCRIPTION

An annual grass which develops from seed. Colour is similar to that of wheat.

WEEDY NATURE

Stems: usually 20-45 cm tall, slightly roughened, branched near the base, upright growing.

A troublesome weed in grain fields. May compete with wheat to a point where no crop will be harvested.

PERSIAN DARNEL
(*Lolium perenne* Bolus. & Hohen.)



Abert
HERBARIUM

QUACK GRASS (*Agropyron repens* [L.] Beauv.)

OTHER NAMES

twitch, quitch, scutch, quick or couch grass.

ORIGIN

Europe.

HABITAT

Cultivated fields, pastures, roadsides or anywhere soil moisture is adequate and disturbance of existing vegetation allows it to become established.

DESCRIPTION

A perennial spreading by seeds and rhizomes.

Stems: smooth, hollow, to 1.2 m tall.

Leaves: flat, 5-10 mm wide, slightly hairy on the upper surface, clasping auricles at the bases of the leaf blades, leaf sheaths of lower leaves often have downward pointing hairs.

Inflorescence: a spike with one row of spikelets on each side of the stem.

Seeds: 3-7 per spikelet, 10 mm long, pale yellow, often with a short awn on the end.

AGRICULTURAL CONCERN

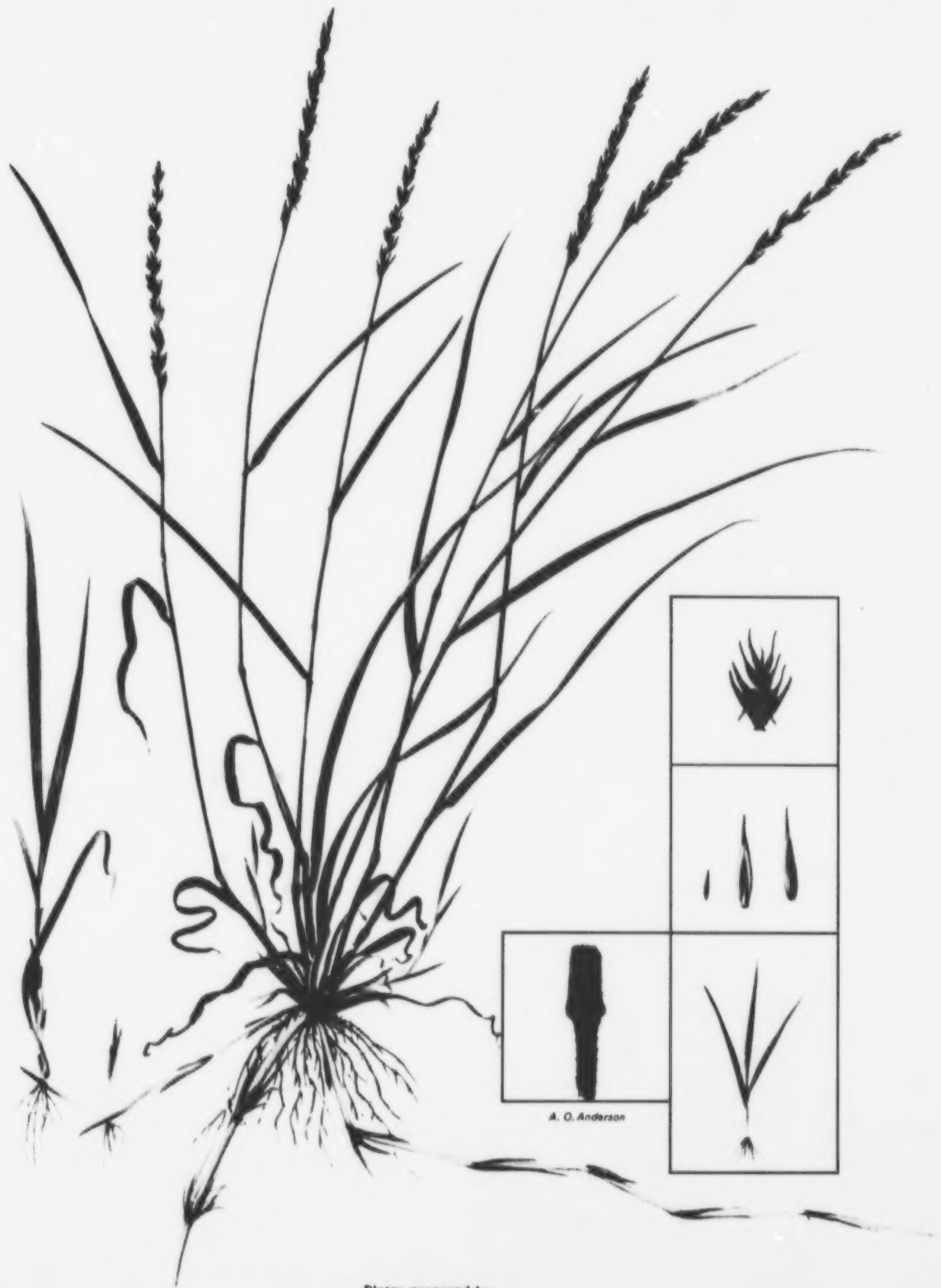
The long running root stalks, the rhizomes, sometimes amounting to 7 to 9 tonnes per hectare, make quack grass a serious pest. The tremendous mass of rhizomes produced makes control by any means extremely difficult. The seeds are a serious contaminant in forage grass seed and may seriously discount the value of this seed, as well as being responsible for yield reduction in the crop itself.

WEEDY NATURE

The seeds produced are very viable and may lie dormant in the soil for several years before germinating. Portions of the rhizomes, even pieces as short as 1 or 2 cm are capable of developing into new plants.

QUACK GRASS

(*Agropyron repens* (L.) Beauv.)



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WILD OATS (*Avena fatua* L.)

OTHER NAMES

oat grass, poor oats, wheat oats.

ORIGIN

Eurasia.

HABITAT

Cultivated fields.

DESCRIPTION

An annual grass reproducing by seed.

Stems: smooth, erect, hollow, to 1.5 m tall.

Leaves: broad and flat to 1.5 cm wide, with a prominent membranous ligule at the base of the blade.

Inflorescence: an open panicle similar to tame oats, usually with 2-3 seeds per spikelet.

Seeds: about 1 cm long, light yellow to almost black in colour, hairy at the base, awned with a usually blackish awn, with a circular scar, sucker mouth, at the point of attachment. Tame oats can be separated from wild oats because their seeds are hairless, unawned, and do not have the sucker mouth.

AGRICULTURAL CONCERN

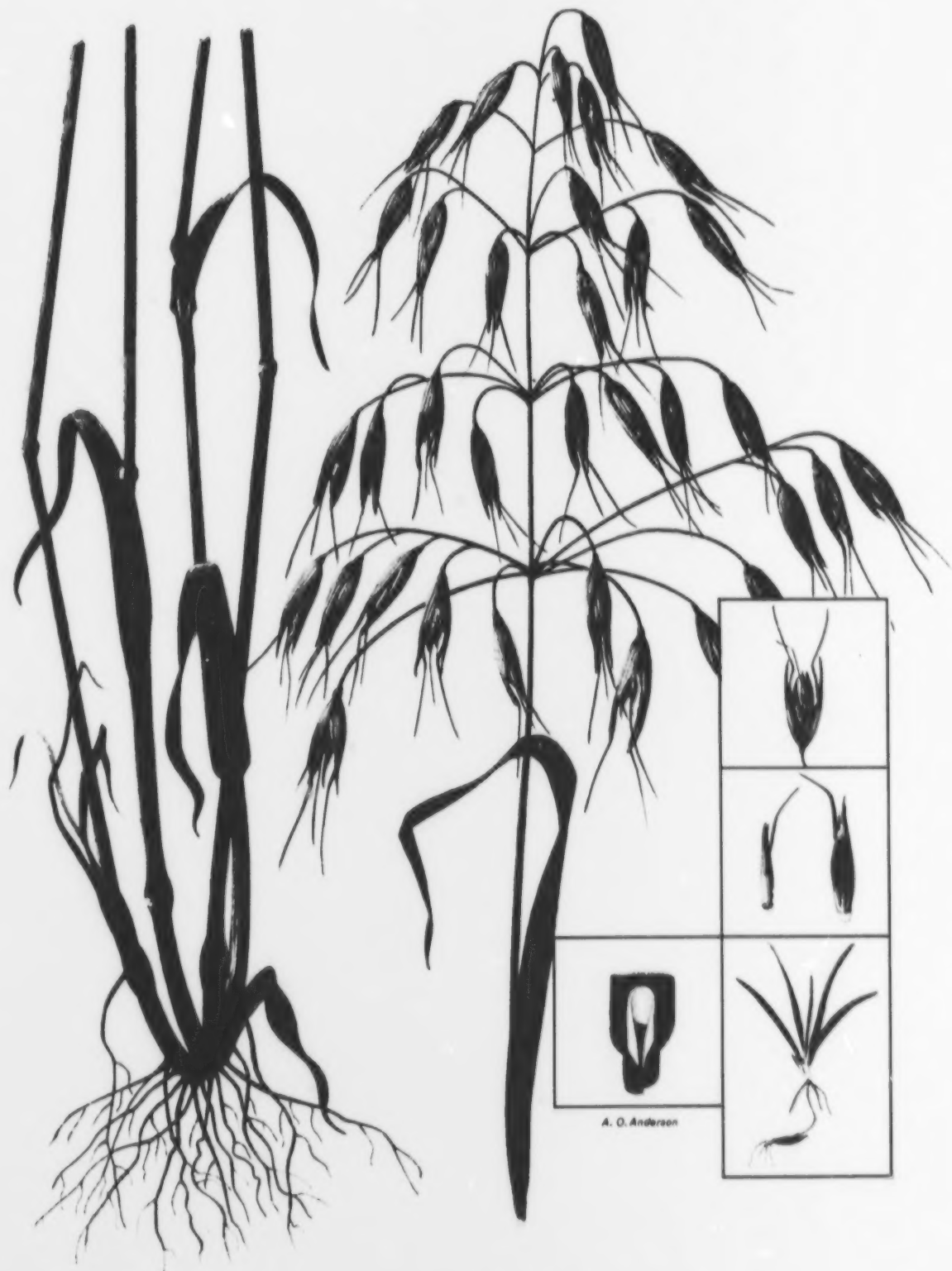
The most serious weed of annual crops in Alberta. Yield reduction depends on the degree of infestation, the time of removal of wild oats, and the competitive ability of the crop.

WEEDY NATURE

The seeds mature and ripen over an extended period of time and are dormant when first produced and can remain in the soil for several years before germinating.

WILD OATS

(*Avena fatua* L.)



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NOTES

LEGUME FAMILY

Leguminosae

NARROW-LEAVED MILK-VETCH (*Astragalus pectinatus* [Hook.] Dougl.)

OTHER NAMES

narrow-leaf poison vetch.

ORIGIN

Native.

HABITAT

Soils with a high selenium content, native pastures and roadsides.

DESCRIPTION

Perennial reproducing by seeds.

Stems: several from a stout taproot 20-50 cm long, usually spreading horizontally and curved up near the ends to occasionally erect.

Leaves: compound, 5-9 cm long, with 9-15 narrow leaflets 2-6 cm long and 2-3 mm wide. The base of the leaf has 2 sharp-pointed stipules 5-9 mm long with those

of the lower leaves grown together on the opposite side of the stem from the leaf.

Flowers: pale yellow to cream coloured, 18-23 mm long, in 10-30 flowered spikes from the bases of the upper leaves.

Seeds: irregularly kidney-shaped, 2-3 mm long by 1.5-2 mm broad, tan to dark reddish-brown in colour, pods 10-20 mm long and 5-7 mm in diameter, pods are fleshy when green but dry to a woody consistency.

AGRICULTURAL CONCERN

This species normally only grows on soils with a high selenium content where it accumulates toxic quantities of selenium. It is of more importance as an indicator of high selenium soils than as a poisonous plant because it is very unpalatable and will only be eaten when other forage is extremely short.

WEEDY NATURE

Not a weed problem.

NARROW-LEAVED MILK-VETCH

(*Astragalus pectinatus* (Pursh.) Dougl.)



SILKY LUPINE (*Lupinus sericeus* Pursh)

OTHER NAMES

flexile lupine, perennial lupine.

ORIGIN

Native

HABITAT

Grasslands and slopes in southwestern Alberta.

DESCRIPTION

A taprooted perennial spreading by seed.

Stems: several from the rootstalk, usually unbranched or with one or two branches, to 80 cm tall, usually silvery because of a covering of white hairs which may be spreading out from the stem or appressed along the stem.

Leaves: alternate — one per node, stalked, each leaf has 7-9 leaflets all attached at the end of the stalk; leaflets 3-7 cm long and 3-7 mm wide, pointed on both ends, silvery hairy on both surfaces.

Flowers: pea-like, borne singly on short stalks 4-7 mm long, in 10-15 cm long clusters at the ends of the stems; sepals fused into a two-lipped calyx; the large rounded petal — the standard is hairy on the outer

surface, the flowers are mostly blue or purple but occasionally white or yellowish flowered plants are seen.

Seeds: 5 × 4 × 2 mm white or cream coloured to a light pinkish-brown, 3-5 per pod; pods 2-3 cm long × 9 mm wide and silky hairs.

Note: Silvery lupine (*Lupinus argenteus* Pursh) a similar species found in the Cypress Hills as well as southwestern Alberta has few, if any, hairs on the standard and the upper surfaces of the leaflets are hairless to being equally as hairy as the lower surface of the leaflets.

AGRICULTURAL CONCERN

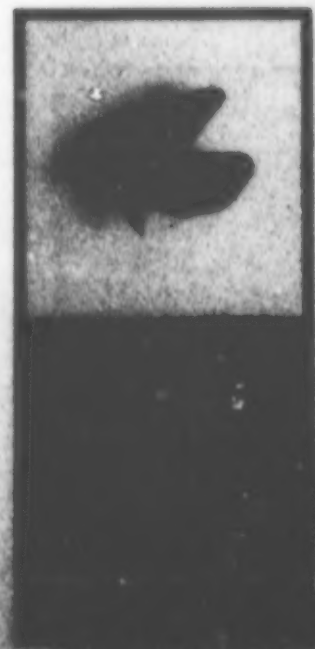
Both silky lupine and silvery lupine are poisonous due to the presence of toxic alkaloids. The alkaloids are present in the leaves but the highest concentrations are present in the seeds. Sheep are most often affected but only when held in an area where lupines form the majority of the forage, otherwise they will normally avoid the lupines for more wholesome forage. Cattle and horses are rarely affected but cases of them being poisoned by lupines have been recorded.

WEEDY NATURE

Not a weed problem.

SILKY LUPINE

(*Lupinus sericeus* Pursh)



Acorn

TWO-GROOVED MILK-VETCH (*Astragalus bisulcatus* [Hook.] A. Gray)

OTHER NAMES

two-grooved loco.

ORIGIN

Native.

HABITAT

Moist soils in native pastures, normally only on soils with a high selenium content.

DESCRIPTION

Tufted perennial reproducing by seed.

Stems: sparsely hairy, several from a thick branched crown, forming dense clumps 0.5-1.5 m wide and 0.5-1 m tall.

Leaves: sparsely hairy to hairless, stalked, pinnately compound with 11-27 narrowly oval-shaped leaflets 11-25 mm long and 3-8 mm wide; 2 pointed brownish stipules 3-6 mm long at the base of each leaf. Stipules of the lower leaves joined

together on the opposite side of the stem from the leaf.

Flowers: 11-15 mm long, similar to pea flowers, mostly purple to occasionally almost white, single on short stalks from a central axis.

Seeds: oval shaped with a notch on one side about 3 mm long by 1.5 mm wide, reddish-brown to greenish in colour, in pods 15-22 mm long with a groove on each side of the middle of the upper surface of the pod.

AGRICULTURAL CONCERN

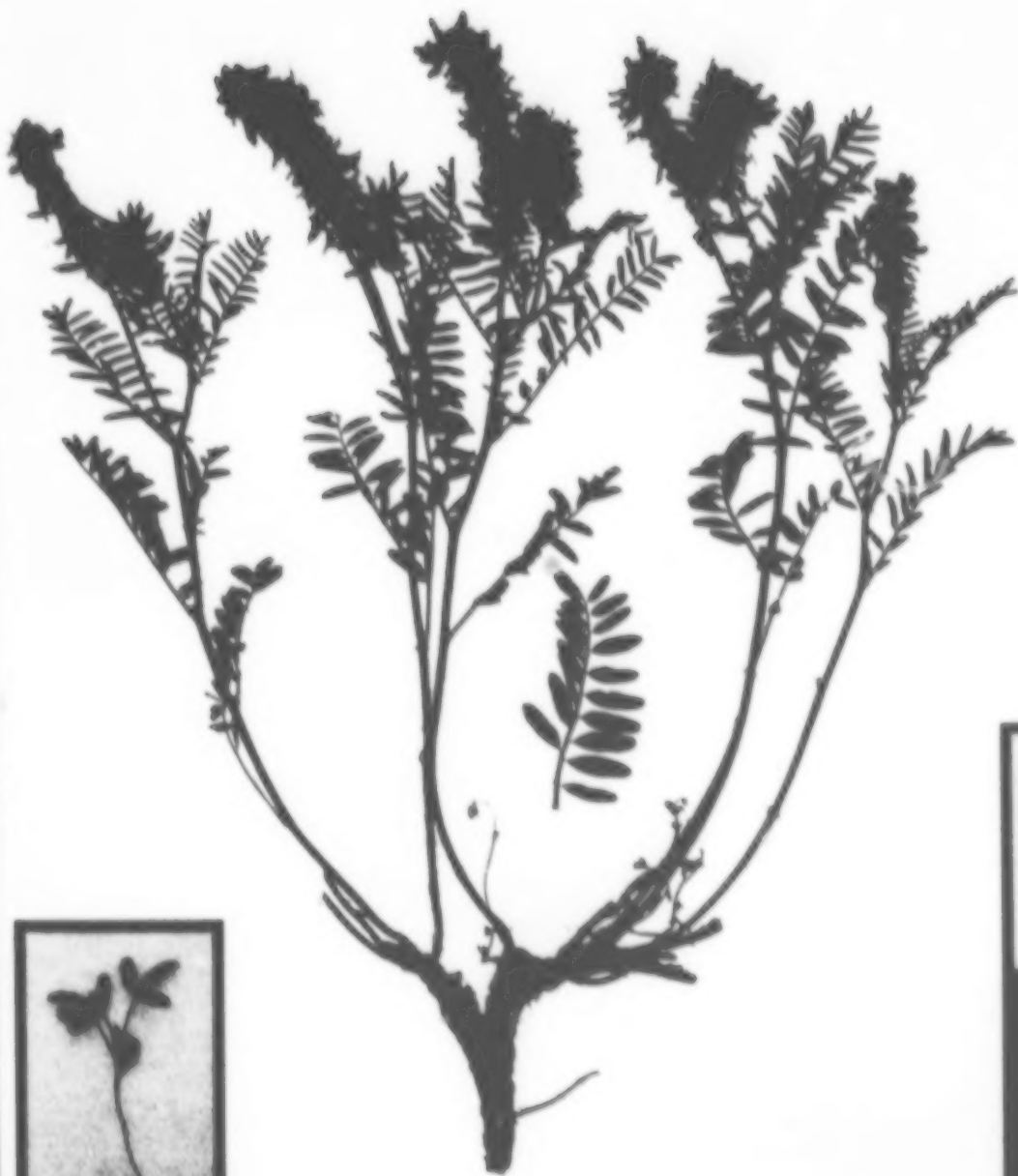
This plant normally only grows on soil high in available selenium where it accumulates toxic quantities of selenium. It is of more importance as an indicator of high selenium soils than as a poisonous plant because it is very unpalatable and will only be eaten when other forage is extremely short, for example under conditions of severe overgrazing.

WEEDY NATURE

Not a weed problem.

TWO-GROOVED MILK-VETCH

(*Astragalus bisulcatus* (Hook.) A. Gray)



NOTES

LILY FAMILY
Liliaceae

DEATH CAMAS (*Zigadenus gramineus* Rydb.)

OTHER NAMES

Zigadenus venenosus Wats., often spelled *Zygadenus*, meadow death camas.

ORIGIN

Native.

HABITAT

Moist draws and hillsides, and slough margins in the grasslands of southern Alberta.

DESCRIPTION

A grass-like perennial belonging to the lily family and spreading by seed.

Stems: to 50 cm tall, hairless, from an onion-like bulb.

Leaves: grass-like, mostly basal, 10-30 cm long and 2-6 mm wide, upper stem leaves much shorter, hairless.

Flowers: 1 cm in diameter, on stalks 5-25 mm long; 3 petals and 3 sepals, all are yellow and similar, so the flowers appear to have 6 petals and no sepals.

Seeds: yellowish brown, 5-6 mm $\times$ 1.5 mm, more or less spindle-shaped with a concave portion on one side.

Note: A flower of white camas, also known as smooth camas, (*Zigadenus elegans* Pursh) was included to show the difference between these two species. White camas is a larger more robust plant with larger flowers, 1.5-2 cm in diameter, than death camas. The petals and sepals of white camas are fused together and to the lower part of the ovary so they appear to be attached about the middle of the ovary rather than at the base of the ovary as they are in death camas. White camas is more widespread in Alberta than death camas, and is not restricted to the grassland area as is death camas.

AGRICULTURAL CONCERN

Death camas is one of the most poisonous plants in Alberta. It is most dangerous in spring when the soft ground enables animals to pull up and eat the bulbs, which are the most toxic part of the plant. Sheep are most often poisoned by death camas but both cattle and horses can be. White camas is less toxic than death camas and does not often cause problems. However, it is a poisonous plant and should be recognized as such.

WEEDY NATURE

Neither species is a weed problem.

DEATH CAMAS

(*Zigadenus venenosus* Wats.)



NOTES

MALLOW FAMILY

Malvaceae

ROUND-LEAVED MALLOW (*Malva rotundifolia* L.)

OTHER NAMES

cheeses.

ORIGIN

Europe.

HABITAT

Barnyards, gardens, waste places.

DESCRIPTION

Annual spreading by seeds.

Stems: prostrate and spreading to occasionally erect, to 1 m long.

Leaves: alternate — one per node, long stalked, stalks to 10 or 15 cm long, almost circular in outline, 2-5 cm in diameter, shallowly 5-7 lobed, hairless or occasionally with a few hairs.

Flowers: inconspicuous in groups of 1-3 at the bases of the leaf-stalks, 5 mm wide, petals white to pale purple about as long as the sepals.

Seeds: 8-12 per flower arranged in a ring around the central portion of the flower, separating like slices of an orange; in outline, kidney-shaped to almost circular with a deep notch, dull brown to black with a light spot in the notch, 2 mm long and wide by 1.3 mm thick.

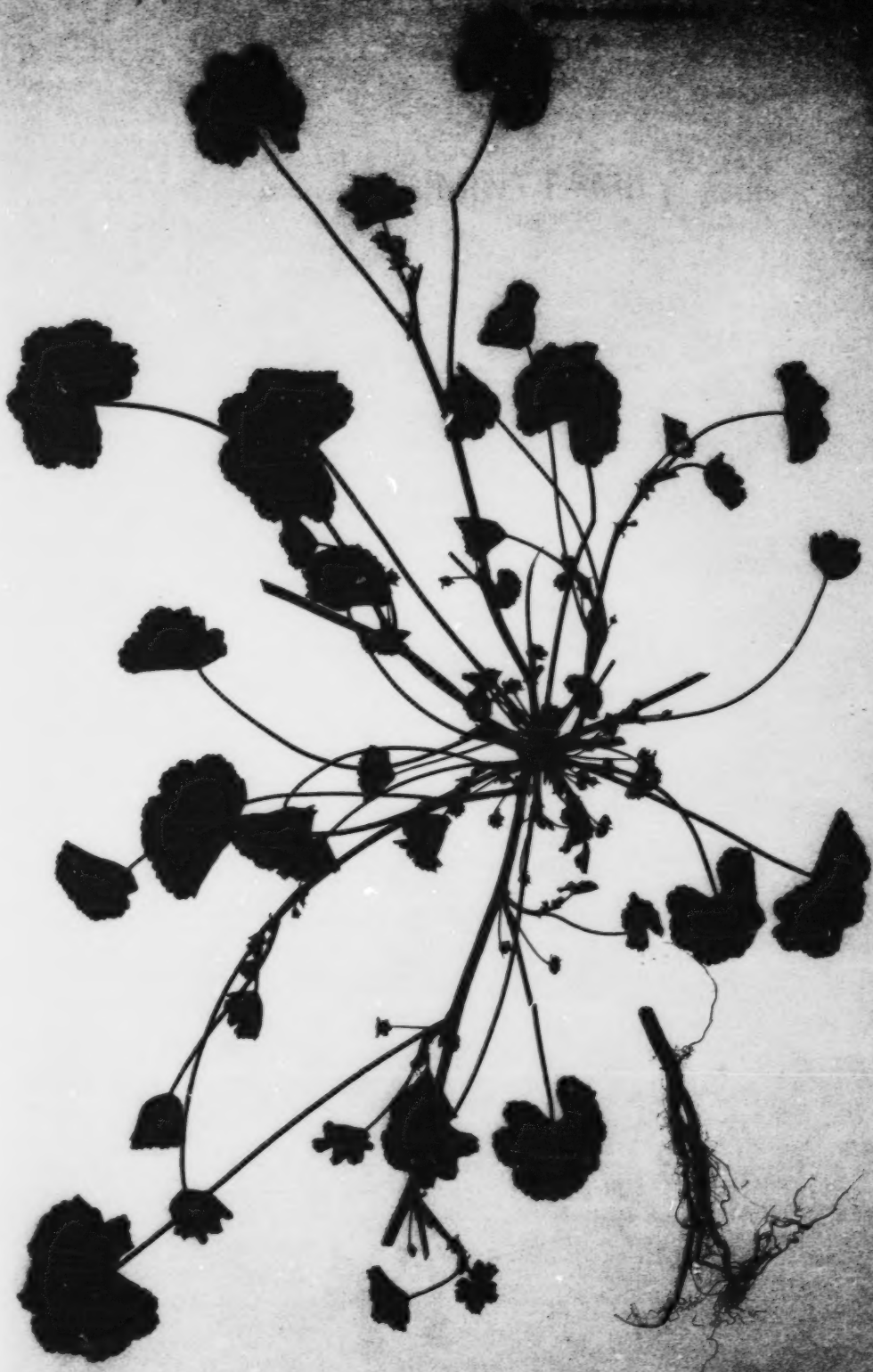
Note: There are three other species of mallow, occasionally found in Alberta, that are similar to round-leaved mallow. They are common mallow (*M. neglecta* Wallr.), small flowered mallow (*M. parviflora* L.) and cluster mallow (*M. verticillata* L.). The major differences among these species are related to the flowers and seeds.

AGRICULTURAL CONCERN

Has generally been considered a weed in gardens, farmyards and waste places. When present in cultivated land it provides strong competition to annual crops.

WEEDY NATURE

A prolific seed producer that can spread rapidly by seed. The seeds have a hard seed coat and can remain dormant in the soil for many years.



NOTES

MINT FAMILY

Labiatae

GROUND-IVY (*Glechoma hederacea* L.)

OTHER NAMES

creeping Charlie, gill-over-the-ground, run-away-robin, cats-fool, field balm.

ORIGIN

Europe.

HABITAT

Moist shaded areas in lawns, gardens and shelterbelts.

DESCRIPTION

A fibrous rooted perennial spreading mainly by above ground stolons.

Stems: weak, to 40 cm tall, with long hairs at the nodes, a few short stiff backward pointing hairs also occur along the stem. The stolons may spread for several metres, sending up stems at regular intervals and forming dense mats on the ground.

Leaves: two per node on opposite sides of the stem, stalks to 10 cm long; blades hairless or with a few short stiff hairs,

rounded with a broad notch at the base, 1-3 cm long, margins crenate (rounded teeth), sometimes purplish on one or both sides.

Flowers: 13-23 mm long, blue-violet, purple spotted, in many plants the flowers lack stamens and are 10 mm or less in length, on short 1 mm stalks at the bases of the upper leaf stalks.

Seeds: 4 per flower $1.5 \times 0.9 \times 0.7$ mm, oval-shaped, triangular in cross section with one side rounded, brown, glandular dotted. Seeds are apparently only rarely produced in Alberta, the plants flower abundantly but the ovaries abort and no seeds are produced.

AGRICULTURAL CONCERN

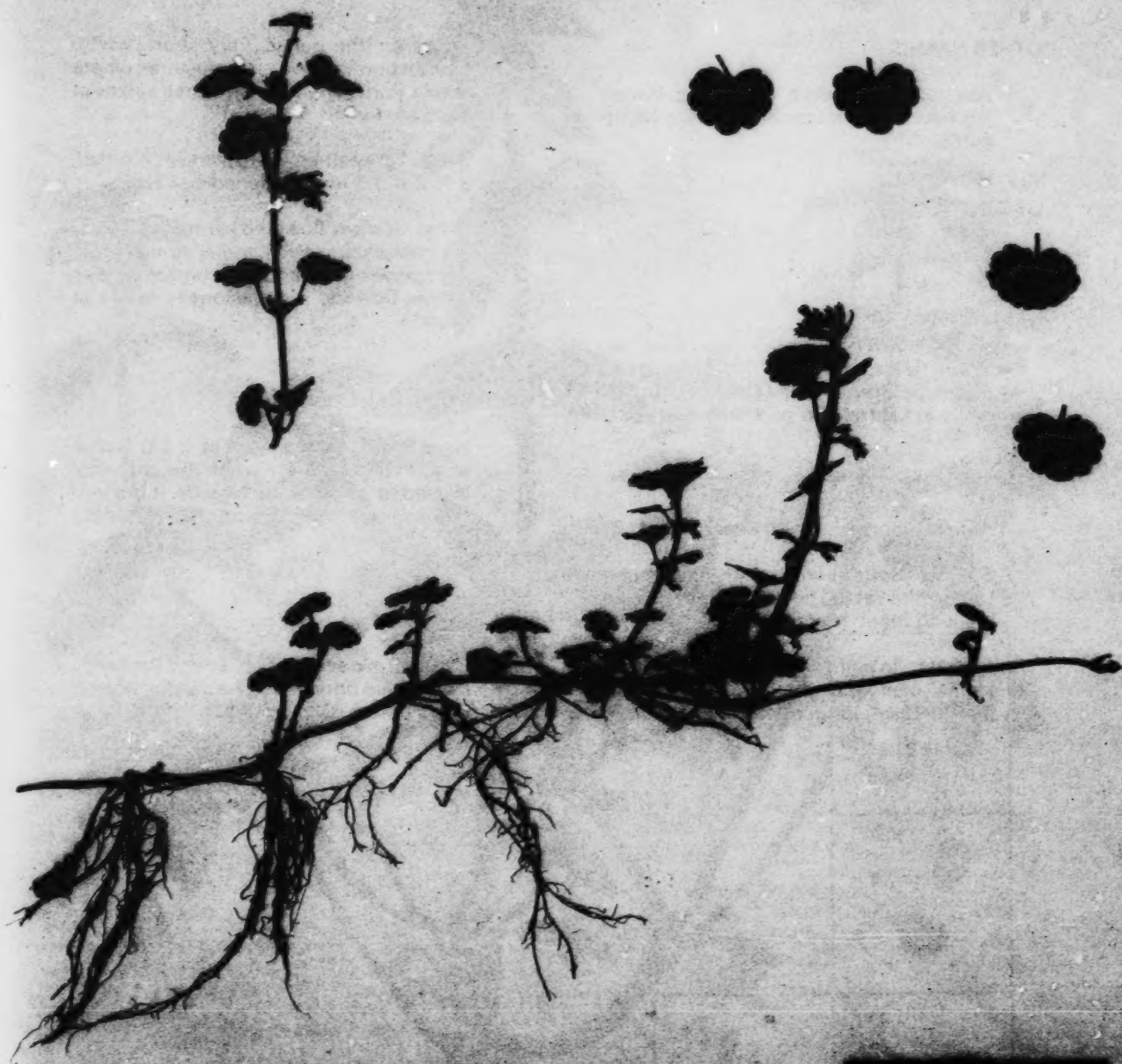
Not a problem in cropland. Very aggressive in lawns.

WEEDY NATURE

Aggressively spreading in moist shady areas by means of stolons. This perennial has occasionally been used as a ground cover planting but is too aggressive for most areas.

GROUND-IVY

(*Glechoma hederacea* L.)



HEMP-NETTLE (*Galeopsis tetrahit* L.)

OTHER NAMES

dog nettle, bee nettle, wild hemp, flowering nettle, ironweed, brittle stem hemp-nettle.

ORIGIN

Eurasia.

HABITAT

Grain fields, gardens, pastures, waste places, open woods and shelterbelts; generally in central and northern Alberta.

DESCRIPTION

Annual, reproducing by seed.

Stems: Square, with bristly hairs, to 1 m tall, swollen at the nodes, erect or spreading with many branches.

Leaves: in pairs on opposite sides of the stems, oval with regularly toothed margins, 5-10 cm long, bristly, hairy.

Flowers: the dense, very short, white, pink, or purple flowers are clustered where leaves join stems; and in dense spikes at ends of stems.

Seed: greyish-brown to blackish, mottled, $3 \times 2 \times 1.5$ mm, flattened egg shape.

Note: Yellow-flowered hemp-nettle (*Galeopsis speciosa* Mill.), a very similar looking species that can be recognized by its yellow flowers, is occasionally found in Alberta.

AGRICULTURAL CONCERN

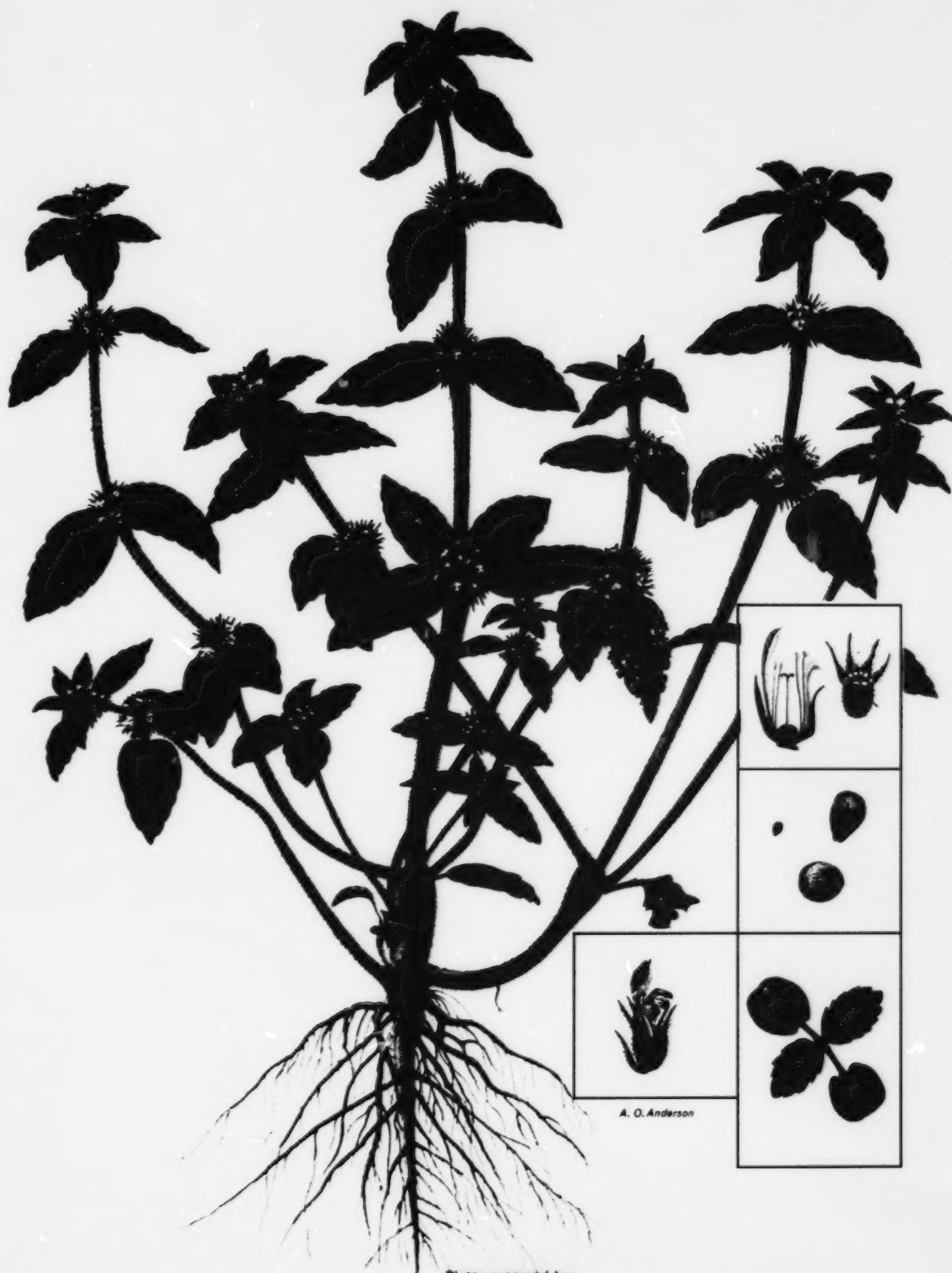
Hemp-nettle is resistant to 2,4-D which enables it to increase when this chemical is used to control other weeds. It is a vigorous competitor with crop plants for space and nitrogen.

WEEDY NATURE

It is a prolific seed producer and the seeds can remain dormant in the soil for several years before germinating.

HEMP-NETTLE

(*Galeopsis tetrahit* L.)



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HENBIT (*Lamium amplexicaule* L.)

OTHER NAMES

None known.

ORIGIN

Europe.

HABITAT

Cultivated fields, waste places and disturbed ground. Widely distributed in black soil zone.

DESCRIPTION

Annual.

Stems: weak, usually branched at the base and horizontally spreading before turning upwards, to 30 cm tall, with a few short stiff hairs.

Leaves: two per node on opposite sides of the stem; lower ones stalked, blades more or less heart-shaped, coarsely toothed with rounded teeth, to 1.5 cm long; upper

leaves similar but stalkless with somewhat broader bases, to 2 cm long.

Flowers: in clusters at the bases of the stalkless leaves; both the sepals (calyx) and the petals (corolla) are fused into tubes; calyx tube, green, hairy, five-toothed 5-8 mm long; corolla tube 12-18 mm long, hairy on the outside, two-lipped, anthers grouped under the arched upper lip.

Seeds: 4 per flower, 2 mm long $\times$ 1 mm wide, pointed on one end, smooth, mottled with white.

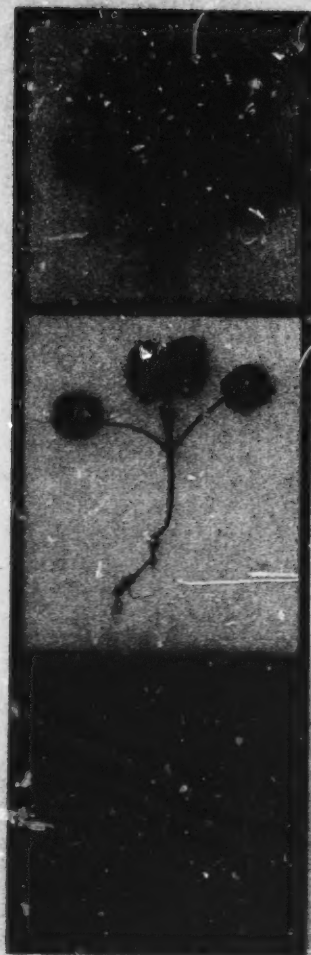
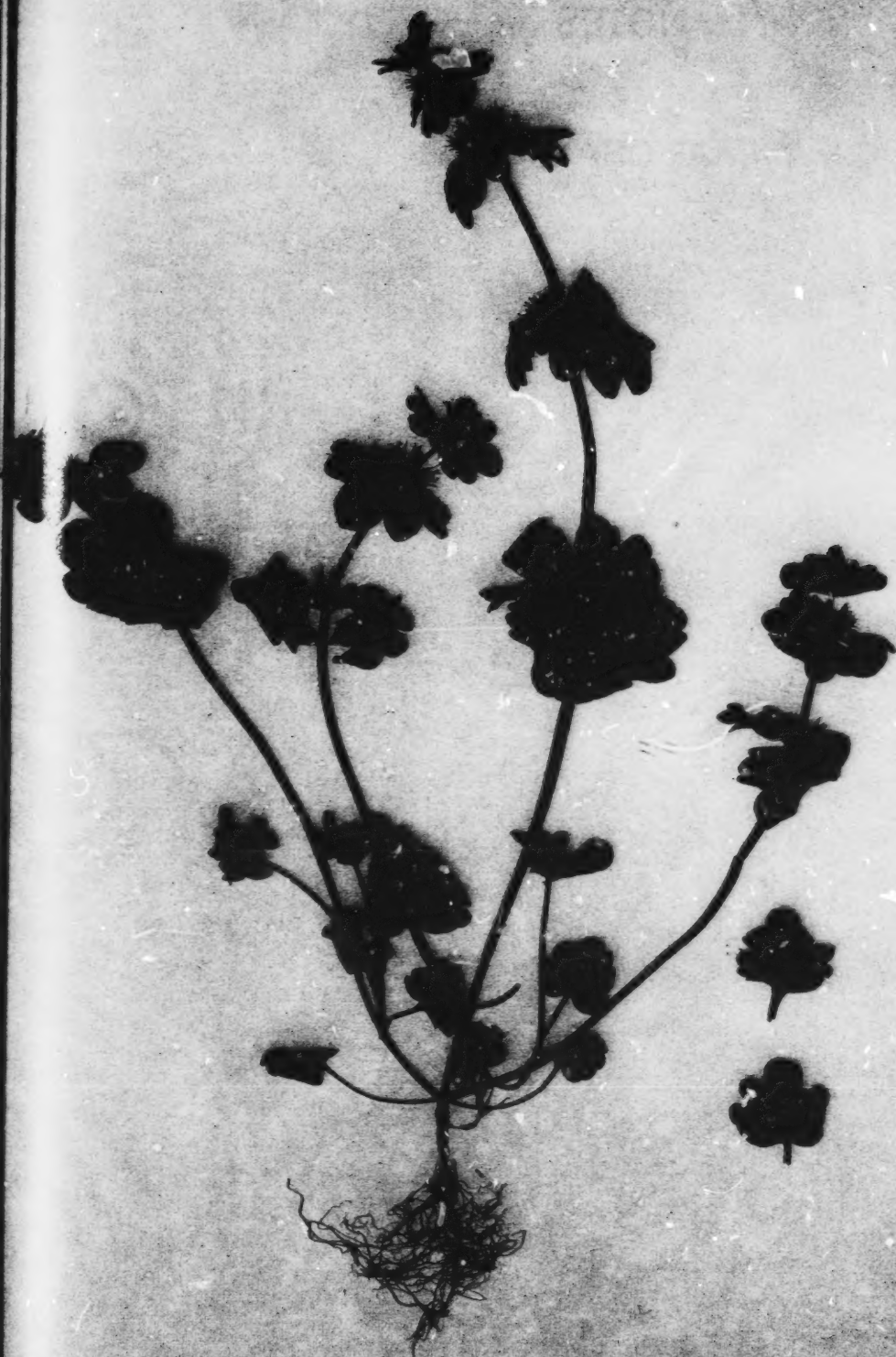
AGRICULTURAL CONCERN

Not readily controlled by chemicals, but usually suppressed by good crop growth. Yield reductions due to henbit have not been reported.

WEEDY NATURE

May be prolific in fertile soil but not a strong competitor. Seed is transported by man and germinates readily throughout the season. Expected to become common on black soils.

HENBIT
(*Lamium amplexicaule* L.)



NOTES

MUSTARD FAMILY

Cruciferae

BALL MUSTARD (*Neslia paniculata* [L.] Desv.)

OTHER NAMES

yellow-weed, neslia.

ORIGIN

Europe.

HABITAT

Cultivated fields, waste places, disturbed ground.

DESCRIPTION

Annual or winter annual spreading by seeds.

Stems: erect, to 1 m tall, with a few long branches, with stellate branched hairs.

Leaves: basal leaves short stalked, widest towards the tip, lance-shaped; stem leaves, alternate — one per node, stalkless, clasping the stem; with branched hairs.

Flowers: small, 2-3 mm broad, 4 yellow petals, clustered near the ends of the stem, on stalks 6-10 mm long.

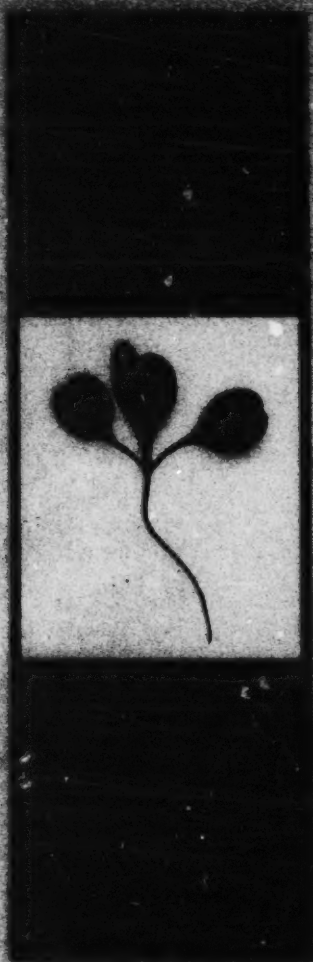
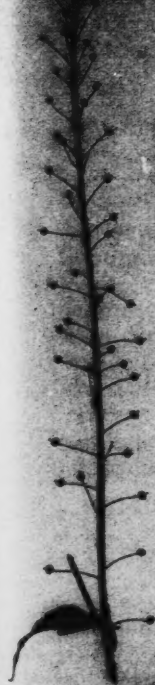
Seeds: yellowish brown, 2.2 mm long, oval, with a prominent ridge down one side, one or occasionally 2 per pod; pods 3 mm long, oval, with a prominent network of low ridges, do not break open easily so the seeds are most often seen still enclosed in the pod; as the seeds develop the stem elongates so the pods are spread out along the stem.

AGRICULTURAL CONCERN

Ball mustard seed is similar in size to that of the Argentine rape and therefore practically impossible to separate. Its presence in rapeseed reduces the quality of the oil and meal.

WEEDY NATURE

Not a major problem weed except in rapeseed fields.



COMMON PEPPERGRASS (*Lepidium densiflorum* Schrad.)

OTHER NAMES

peppergrass, poor man's pepper, prairie peppergrass.

ORIGIN

Introduced from Europe and possibly also native.

HABITAT

Roadsides, cultivated fields, waste places and disturbed ground.

DESCRIPTION

Annual or winter annual spreading by seed.

Stems: erect, to 50 cm tall, more or less hairy with simple hairs, much branched from the middle to the top.

Leaves: basal leaves 3-10 cm long by 1-2 cm wide; margins serrate (toothed) to pinately lobed, the lobes often serrated; normally deciduous by the time the seed pods begin to develop; stem leaves, one per node, stalkless, not clasping the stem, reduced, mostly entire to occasionally toothed.

Flowers: inconspicuous, numerous on short stalks 2-3 mm long, sepals 1 mm long; petals usually absent, when present white and up to 1 mm long.

Seeds: 1.3 × 1 mm, oval-shaped with one end pointed, narrowly wing margined, with a shallow groove on either side; two seeds per pod, pods oval, about 3 mm long and flattened at right angles to the septum, dividing the two halves of the pod.

Note: Branched peppergrass (*L. ramosissimum* Nels.) is a similar species also commonly found. It may be distinguished from common peppergrass by its pods which are more pointed towards the end and by its more branched habit, with the branches starting from the base of the plant.

AGRICULTURAL CONCERN

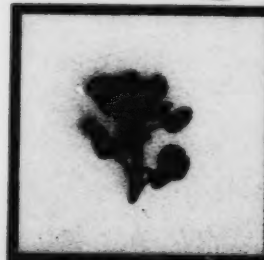
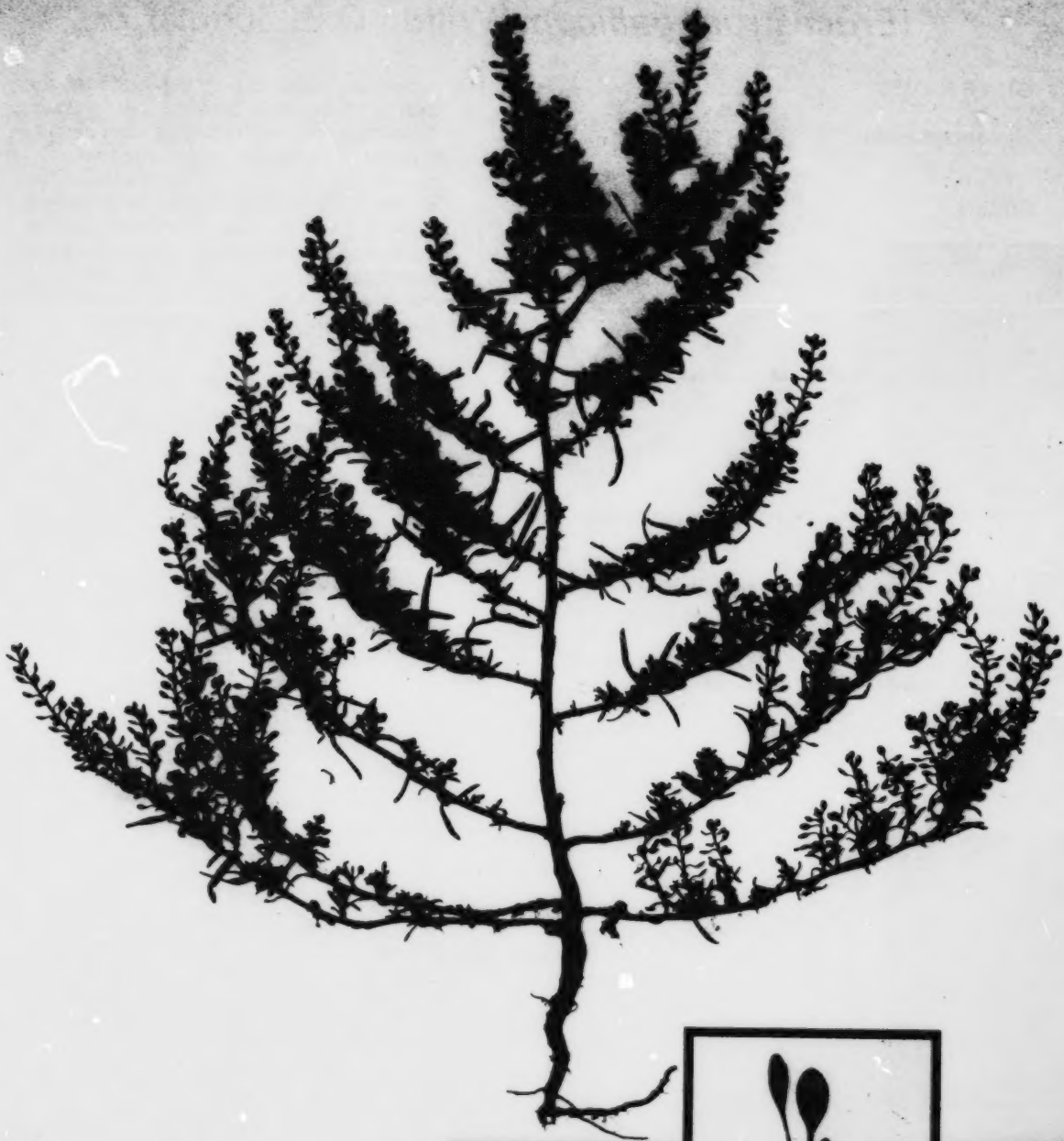
Though it is present in fields throughout the province it is easily controlled in most crops and is not known to cause significant losses in crop yields.

WEEDY NATURE

Produces large quantities of seed. Spreads in seed and feed.

COMMON PEPPERGRASS

(*Lepidium densiflorum* Schrad.)



Alberta
AGRICULTURE

DOG MUSTARD

(*Erucastrum gallicum* [Willd.] O.E. Schulz)

OTHER NAMES

rocketweed. :/

Flowers: clustered at the ends of the branches, stalked; petals 4, pale yellow, 4-7 mm long; the first few flowers usually form at the bases of reduced leaves.

ORIGIN

Europe.

Seeds: 1.2 × 0.8 mm, oval-shaped with a low ridge on one side, brownish, in pods 2-5 cm long, as the seeds mature the stem elongates so the pods are spread out along the stem, pods spreading sometimes almost at right angles to the stem.

HABITAT

Cultivated fields, waste places and disturbed ground.

AGRICULTURAL CONCERN

DESCRIPTION

Annual or winter annual spreading by seed.

Stems: erect, to 80 cm tall, simple to much branched, covered with downward pointing hairs.

Leaves: one per node, pinnately lobed, the lobes often with wavy margins, sparsely covered with stiff simple hairs, 3-20 cm long by 1-6 cm wide.

Fairly easily controlled in cereals, forages and flax. Has the potential of becoming a problem in tame mustard and rapeseed crops.

WEEDY NATURE

Spreads mainly by the movement of seed and feed.

DOG MUSTARD

(*Erucastrum gallicum* (Willd.) O.E. Schulz)



FLIXWEED (*Descurainia sophia* [L.] Webb)

OTHER NAMES

None known.

ORIGIN

Europe.

HABITAT

Grain fields, gardens, roadsides and waste places.

DESCRIPTION

Annual or biennial reproducing by seed.

Stems: erect 0.3-1 m tall, branched above, with small stellate branched hairs, usually greyish because of the hairs.

Leaves: alternate — one per node — stalked, 2-10 cm long, two or three times divided into narrow segments, covered with stellate branched hairs which usually give the leaves a greyish colour.

Flowers: small in dense clusters at the ends of the branches, 4 pale yellow petals about as long as or shorter than the 4 sepals, sepals 2-2.5 mm long.

Seeds: as the seeds mature the main flower stalks elongate so the inflorescence makes up to ½ the total height of the plant, the seeds are about 1 mm long, orange in colour and form a single row in each side of the silique (seed pod).

AGRICULTURAL CONCERN

One of the most common weeds in the province, found in gardens, roadsides, fields and in fact anywhere that land has been cultivated or native vegetation destroyed. Very widespread so any relaxation of control measures will permit heavy infestation.

WEEDY NATURE

A vigorous plant and a prolific seed producer which provides heavy competition for crops.

FLIXWEED

(*Descurainia sophia* (L.) Webb)



GRAY TANSY MUSTARD

(*Descurainia richardsonii* [Sweet] O.E. Schulz)

OTHER NAMES

tansy mustard.

ORIGIN

Native.

HABITAT

Gravelly soils, disturbed areas and roadsides.

DESCRIPTION

An annual or possibly also biennial species spreading by seed. Less common than flixweed which it resembles.

Stems: to 1 m tall, simple to much branched, green and almost hairless to grayish with stellate branched hairs.

Leaves: to 10 cm or occasionally longer, narrowly oval-shaped in outline, once or twice divided into segments about 3 mm wide, gradually reduced up the stem; the hairiness of the leaves varies along with the hairiness of the stems.

Flowers: yellow, four petals 1.3 mm long equalling or slightly longer than the sepals, borne singly on stalks about 5 mm long in dense clusters at the ends of the

branches. As the seeds develop the central axis elongates so that the seed pods are less crowded than the flowers.

Seeds: $0.3 \times 0.5 \times 1.0$ mm yellowish brown in one row on each side of the two-chambered seed pod; seed pods 1 cm long by 0.8-1.2 mm in diameter.

Note: Green tansy mustard (*Descurainia pinata* [Walt.] Britt.) is a very similar native species which can be differentiated by the seed pod which is somewhat larger in diameter, 1-2 mm, and has two rows of seeds in each side of the two-chambered seed pod.

Flixweed, a similar species introduced from Europe, can be distinguished from these two species by its much longer seed pods — 1-3 cm long compared to 8-15 mm long for the seed pods of the tansy mustards.

AGRICULTURAL CONCERN

Not a serious agricultural weed. Often confused with flixweed which is a serious weed.

WEEDY NATURE

Common in fields and waste places across Prairie Provinces. Fairly large plant posing threat to crop production. Controlled by cultivation.



LENS-PODDED HOARY CRESS (*Cardaria draba* [L.] Desv. var *repens* [Schrenk] O.E. Schulz.)

OTHER NAMES

white top, perennial peppergrass, *Cardaria chalapensis* (L.) Hand.-Maz. is another Latin name often used for this plant.

Flowers: on stalks to 1.5 cm long, 4 white petals 3-4 mm long, 4 white-margined sepals 2-2.5 mm long.

Seeds: 1-4 in small lens-shaped pods, oval, somewhat compressed 1.5 × 2 mm.

ORIGIN

Europe, Asia.

Notes: Two other hoary cresses are also found in Alberta. They are *Cardaria draba* (L.) Desv., heart-podded hoary cress and *C. pubescens* (C.A. Mey.) Jarmolenko, globe-podded hoary cress. These can be separated from lens-podded hoary cress by their seed pods. Heart-podded hoary cress has heart-shaped seed pods that lack hairs. Lens-podded hoary cress also has hairless pods but they are circular in outline and flattened perpendicularly to the dividing septum. Globe-podded hoary cress has almost spherical pods that are covered with short simple hairs.

HABITAT

Irrigation ditch banks, roadsides, waste places, hay fields, cultivated fields.

DESCRIPTION

This is a perennial that reproduces by creeping roots and seeds.

Stems: erect, 20-40 cm tall, with few branches, hairless above and somewhat to densely hairy below with unbranched hairs.

Leaves: basal and lower leaves sparsely to densely hairy, upper leaves hairless to sparsely hairy, with unbranched hairs, irregularly toothed to smooth-margined, stem leaves to 8 cm long and 3 cm wide, basal leaves stalked, stem leaves stalkless, upper stem leaves with their bases clasping the stem.

AGRICULTURAL CONCERN

A deep-rooted perennial weed that can be difficult to control.

WEEDY NATURE

A creeping rooted perennial that can spread by seeds and by pieces of rootstalk.

LENS-PODDED HOARY CRESS
(*Cardaria draba* (L.) Desv. var. *repens* (Schmink) O.E. Schulz.)



SHEPHERD'S-PURSE

(*Capsella bursa-pastoris* [L.] Medic.)

OTHER NAMES

pepper plant, shepherd's-pouch, pick pocket, mother's-heart, St. James weed.

ORIGIN

Europe.

HABITAT

Gardens, yards, cultivated fields, roadsides, etc.

DESCRIPTION

An annual or winter annual that spreads by seed.

Stems: erect, simple or branched at the base, to 80 cm tall, covered with grey hairs.

Leaves: the basal leaves are 4-5 times as long as wide, to 10 cm long, vary from almost entire margined to deeply lobed. The stem leaves are smaller with toothed margins and lobes that clasp the stem.

Flowers: with 4 white petals 2-4 mm long, sepals shorter, borne singly on short stalks clustered at the ends of the stems. As the seed pods mature the stem elongates so the seed pods are spread out along the stem.

Seeds: less than 1 mm in diameter, light brown, borne in small triangular or heart-shaped pods with the stalk at the pointed end. Many of the common names of this plant make reference to the distinctive shape of the seed pods.

AGRICULTURAL CONCERN

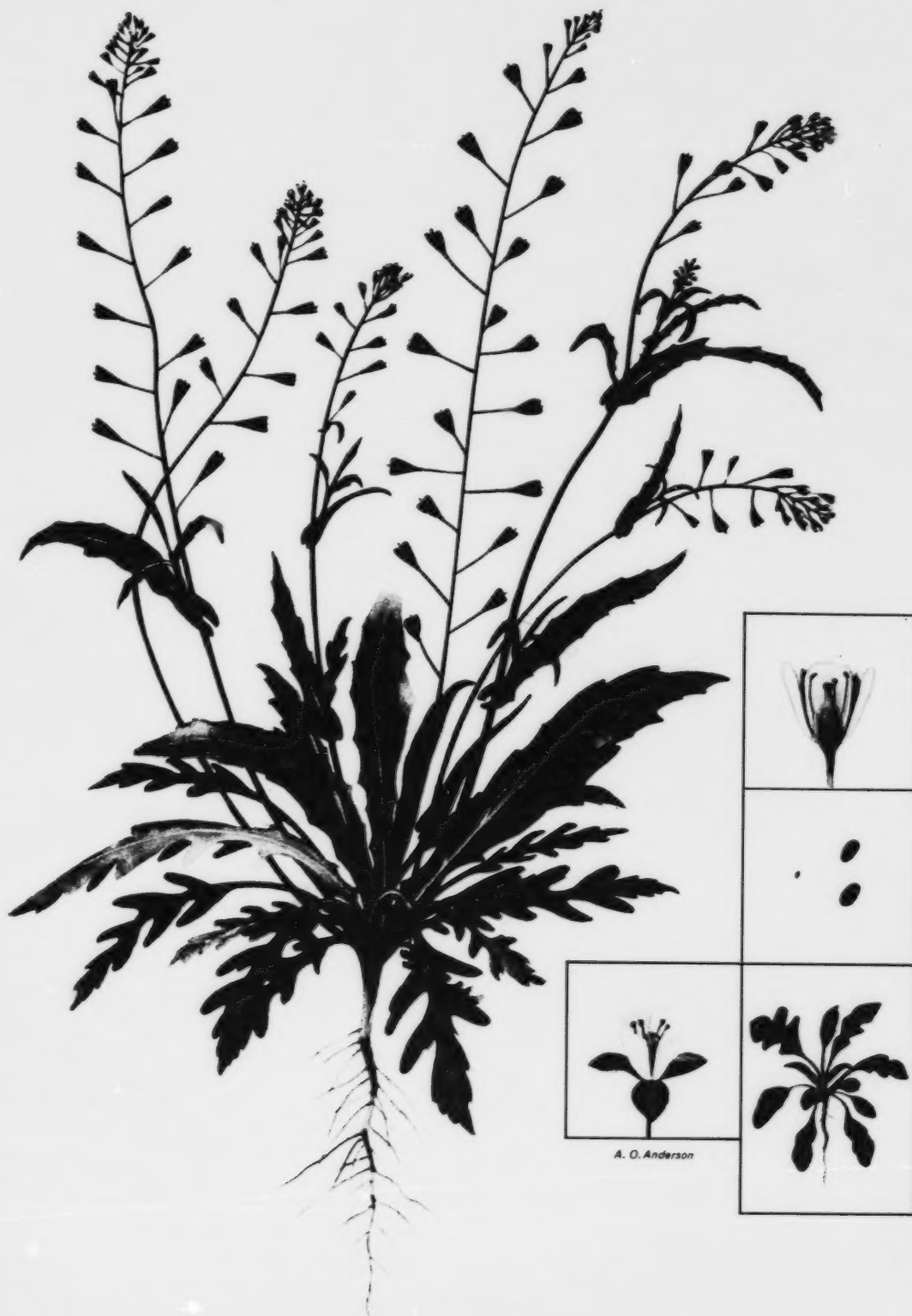
This is an easy weed to control and exists mainly as a nuisance rather than a serious problem.

WEEDY NATURE

Shepherd's-purse spreads only by seed. Plants which start growing in the spring or summer will flower and produce seed the same year. Plants which start growing in the fall overwinter as a rosette of leaves and produce seed early the next spring.

SHEPHERD'S PURSE

(*Capsella bursa-pastoris* (L.) Medic.)



A. O. Anderson

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STINKWEED (*Thlaspi arvense* L.)

OTHER NAMES

Frenchweed, fanweed, pennycress, field pennycress.

Flowers: clustered at the ends of the stems, 4 white petals 3-4 mm long. As the seed pods develop the stem elongates so they are spread out along the stem.

ORIGIN

Eurasia.

AGRICULTURAL CONCERN

HABITAT

Cultivated fields, gardens, waste land and bare soils.

Stinkweed starts growth early in the spring often before the snow is gone and because of this it can cause serious moisture loss prior to the seeding of crops, particularly in the brown and dark-brown soil zones. The plants can cause off-flavors in both meat and milk when they are eaten by livestock. The seeds contain poisonous mustard oils which make them unpalatable to livestock and even small amounts of them in livestock feed will cause the feed to be rejected by the livestock.

DESCRIPTION

An annual or winter annual that spreads by seed and has a strong foetid odor.

Stems: erect, simple or branched from base, to 60 cm tall, hairless.

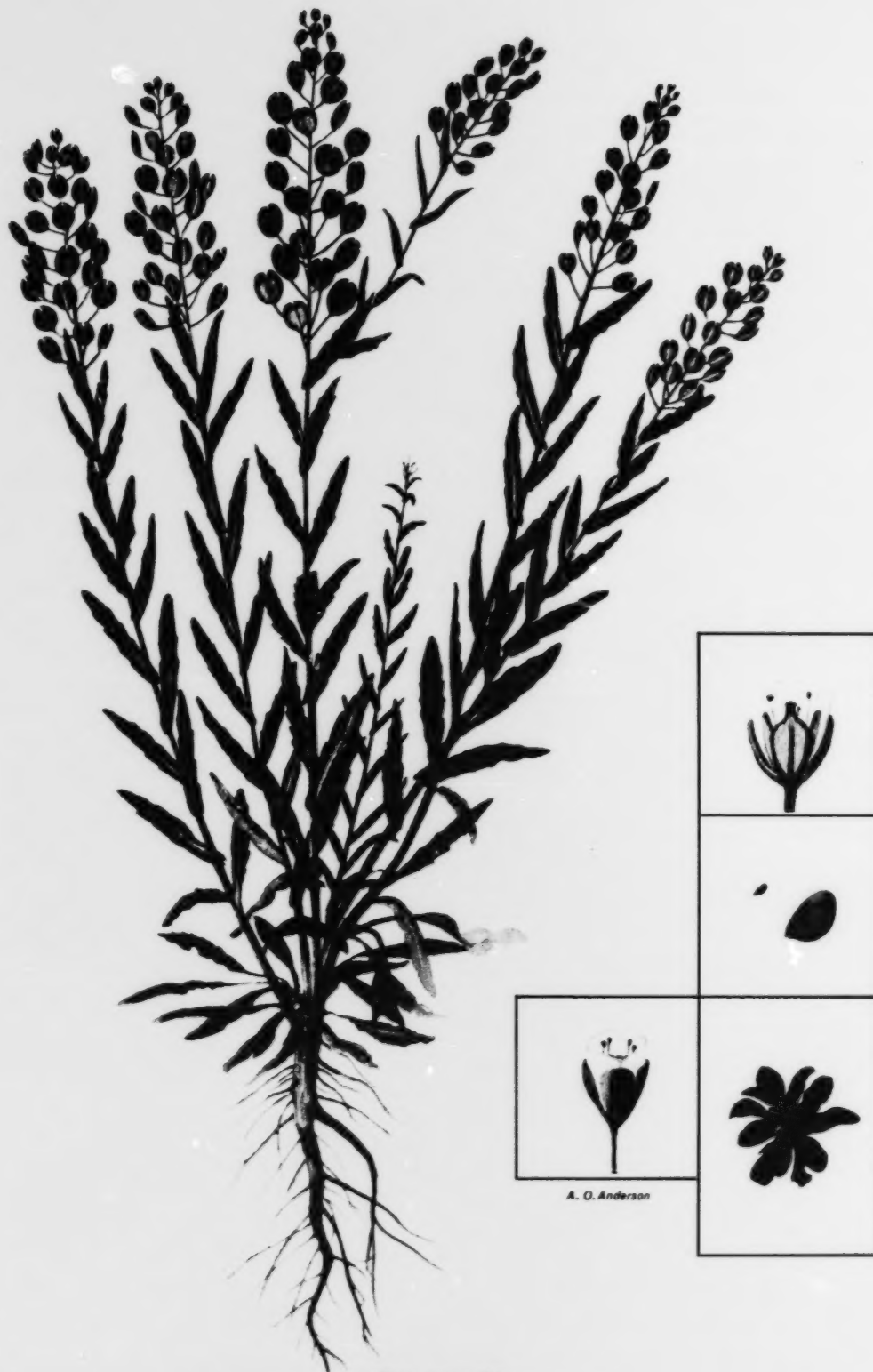
Leaves: a rosette of stalked basal leaves is produced first, they are up to 10 cm long, with a few teeth on the margin; the stem leaves are generally smaller, stalkless, and clasp the stem, all leaves lack hairs.

WEEDY NATURE

The plant is a prolific seed producer and because it starts growth from an established root system very early in the spring it can produce seed very early in the summer.

STINKWEED

(*Thlaspi arvense* L.)



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WILD MUSTARD (*Brassica kaber* [D.C.] Wheeler var. *pinnatifida* [Stokes] Wheeler)

OTHER NAMES

charlock, crunchweed, field kale.

ORIGIN

Eurasia.

HABITAT

Cultivated fields, waste places, disturbed ground.

DESCRIPTION

Annual spreading by seed.

Stems: erect, normally much branched to occasionally simple to 1 m tall, with a purplish spot at the base of each branch, short stiff hairs all over or mainly on the lower part of the stem.

Leaves: alternate — one per node, simple, or with a few small lobes near the base to divided into several leaflets with the terminal one much the largest, margins coarsely toothed, lower leaves stalked, upper ones stalkless or nearly so, with scattered short stiff hairs.

Flowers: bright yellow, 15 mm broad with 4 petals, on stalks 2-6 mm long, clustered at the ends of the branches.

Seeds: spherical, 1-2 mm in diameter, brown to black, with a slightly roughened surface, in pods that are spread out along

the stem which elongates as the seeds develop.

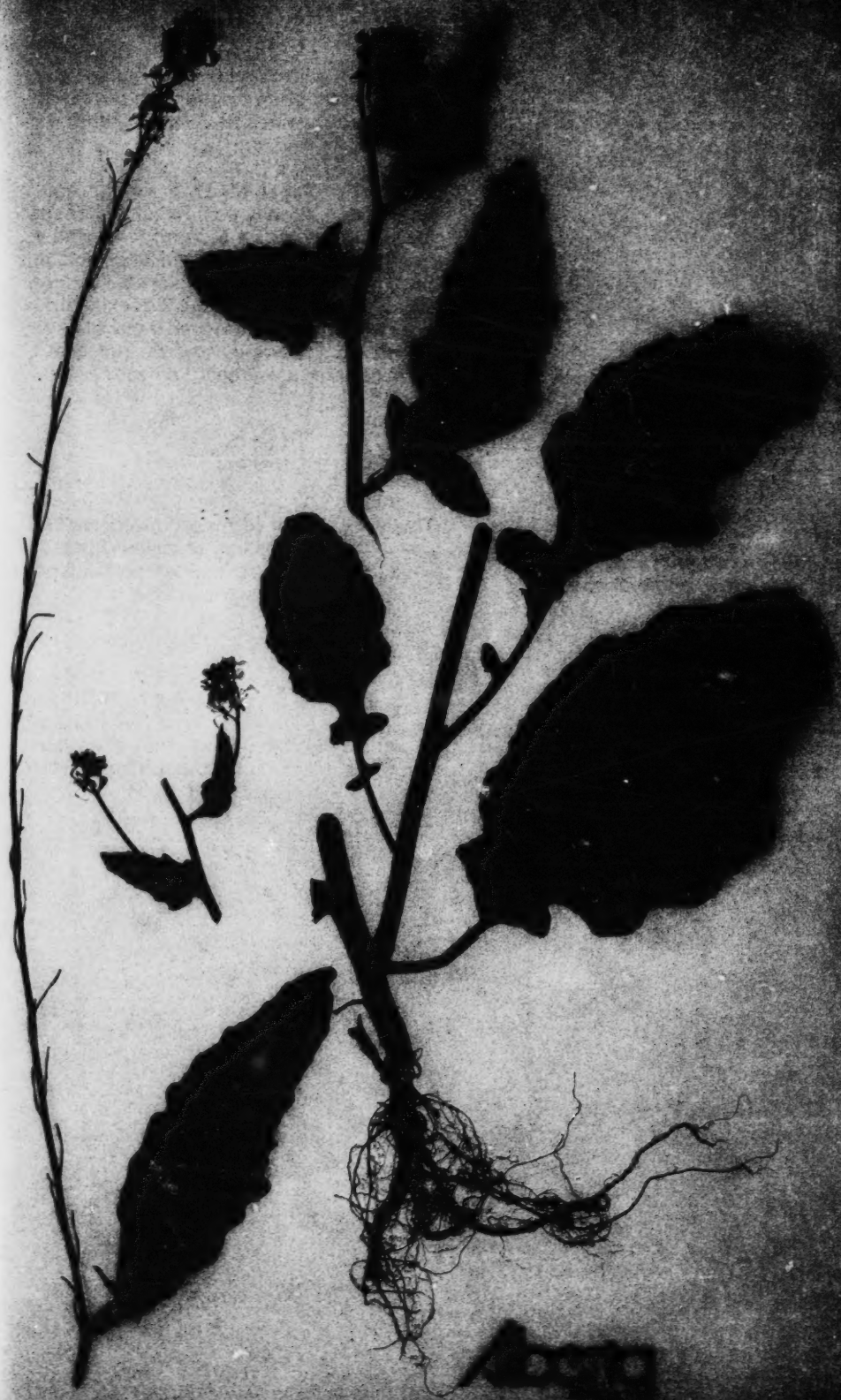
Note: Wild mustard seeds can be separated from rapeseed, except the variety *Candle*, by allowing the seeds to soak in water for a few minutes, a clear gelatinous coating will develop around the wild mustard seeds but not the rapeseed. Some seeds of *Candle* rapeseed also have the mucilaginous coating found on wild mustard seeds. The plants can be separated by the purplish coloration of the wild mustard seed pods, the purple markings at the bases of the branches in wild mustard and by the upper leaves on the rapeseed plants which clasp the stem. The upper leaves of wild mustard do not clasp the stem.

AGRICULTURAL CONCERN

Prior to the introduction of 2,4-D wild mustard was one of the major weed problems in growing cereals. It is very susceptible to 2,4-D and all but disappeared once the use of 2,4-D became widespread, however with the increase in rapeseed acreage it is making a comeback. It is a problem in rapeseed because it is easily overlooked, lowers the quality of the oil and meal, and there is no practical method of controlling it in rapeseed.

WEEDY NATURE

A prolific seed producer that can increase and spread very rapidly if not controlled.



WILD RADISH (*Raphanus raphanistrum* L.)

OTHER NAMES

jointed charlock, jointed radish, wild turnip, white charlock.

ORIGIN

Eurasia.

HABITAT

Cultivated fields, waste places, disturbed ground.

DESCRIPTION

Annual or biennial spreading by seed.

Stems: erect, to 80 cm tall, with scattered short stiff hairs, with a few long branches from near the base of the plant.

Leaves: alternate—one per node, lower ones divided into several leaflets, the terminal leaflet several times larger than the others, margins toothed, upper leaves with toothed margins but not lobed or divided into leaflets, usually with a few short stiff hairs.

Flowers: with 4 yellow to occasionally white petals often tinged with purple or with purple veins, 18-20 mm broad, on stalks 10-25 mm long.

Seeds: egg-shaped, 3 mm long, irregular, reddish brown, somewhat flattened, in distinctive pods 4.5-6 mm long with a beak forming about $\frac{1}{4}$ of the length of the pod, strongly ribbed longitudinally, constricted between the seeds, breaking into one-seeded segments when mature, these segments are woody and do not break open easily so naked seeds are rarely seen.

AGRICULTURAL CONCERN

This weed is not common in Alberta but seems to be increasing especially in rapeseed crops. It is a strong competitor, and can reduce yields significantly.

WEEDY NATURE

A prolific seed producer with seed that can remain dormant in the soil for several years.



Adiantum

WORMSEED MUSTARD (*Erysimum cheiranthoides* L.)

OTHER NAMES

treacle mustard, treacle erysimum.

ORIGIN

Eurasia, or possibly some forms native.

HABITAT

Moist places, cultivated fields and waste places.

DESCRIPTION

Annual or winter annual spreading by seed.

Stems: erect, to 1 m tall, simple or occasionally branched, sparsely covered with branched hairs.

Leaves: one per node, narrow to 8 cm long by 2 cm wide, with smooth wavy or minutely toothed margins, upper ones stalkless, lower ones with short stalks, sparsely covered with mostly three-branched hairs.

Flowers: small, in 1-1.5 cm wide clusters at the ends of the stems, the 4 petals pale yellow, 3-5 mm long.

Seeds: 1.2-0.6 mm, light brown, irregularly oval-shaped with a ridge down one side, not winged, in pods 1.5-3 cm long, as the seeds develop the stem elongates so the pods are spread out along the stem, the pods are more or less erect on short stalks.

AGRICULTURAL CONCERN

Not of major concern to agriculture. Easily controlled in most crops. Has the potential of becoming a problem in rapeseed and tame mustard crops. On account of pungent odour stock refuse to eat grain in which these seeds are present in any appreciable quantity. Seeds are poisonous due to the presence of mustard oils.

WEEDY NATURE

Produces large quantities of seed. Spread by seed and feed.

WORMSEED MUSTARD

(*Erysimum cheiranthoides* L.)



NOTES

NETTLE FAMILY

Urticaceae

STINGING NETTLE (*Urtica dioica* L.)

OTHER NAMES

Urtica gracilis Ait. A Latin name often used for some native populations of nettles. bigsting nettle.

ORIGIN

Native and some races introduced from Europe.

HABITAT

Areas of deep rich moist soils, streambanks thickets and farmyards — especially old manure piles.

DESCRIPTION

Rhizomatous perennial reproducing by seeds and underground stems.

Stems: 1-3 m tall, more or less four-sided, from hairless except for a few stinging hairs to densely hairy with both stinging and normal hairs.

Leaves: opposite — two per node — stalked, with prominent 10-15 mm long, leaf blades from narrowly oval 3-4 times as long as wide and tapering towards both ends to broadly oval 1.5-2 times as long as wide and somewhat heart shaped at

the base, margins coarsely serrated, leaves also vary in hairiness from densely hairy with both stinging and normal hairs to sparsely covered with stinging hairs only.

Flowers: numerous, in clusters from the bases of the leaf stalks, greenish sepals 1-2 mm long, petals lacking, flowers are of two kinds, male and female, plants usually with either male or female flowers only; infrequently with both kinds of flowers. Plants of the European races are more frequently found with both kinds of flowers.

Seeds: one per flower, light brown in color, 1-1.5 mm long.

Note: Due to the variability of the leaf shape, leaf pubescence, stem pubescence, and flower arrangement this species is subdivided into several subspecies and varieties which are often considered to be separate species.

AGRICULTURAL CONCERN

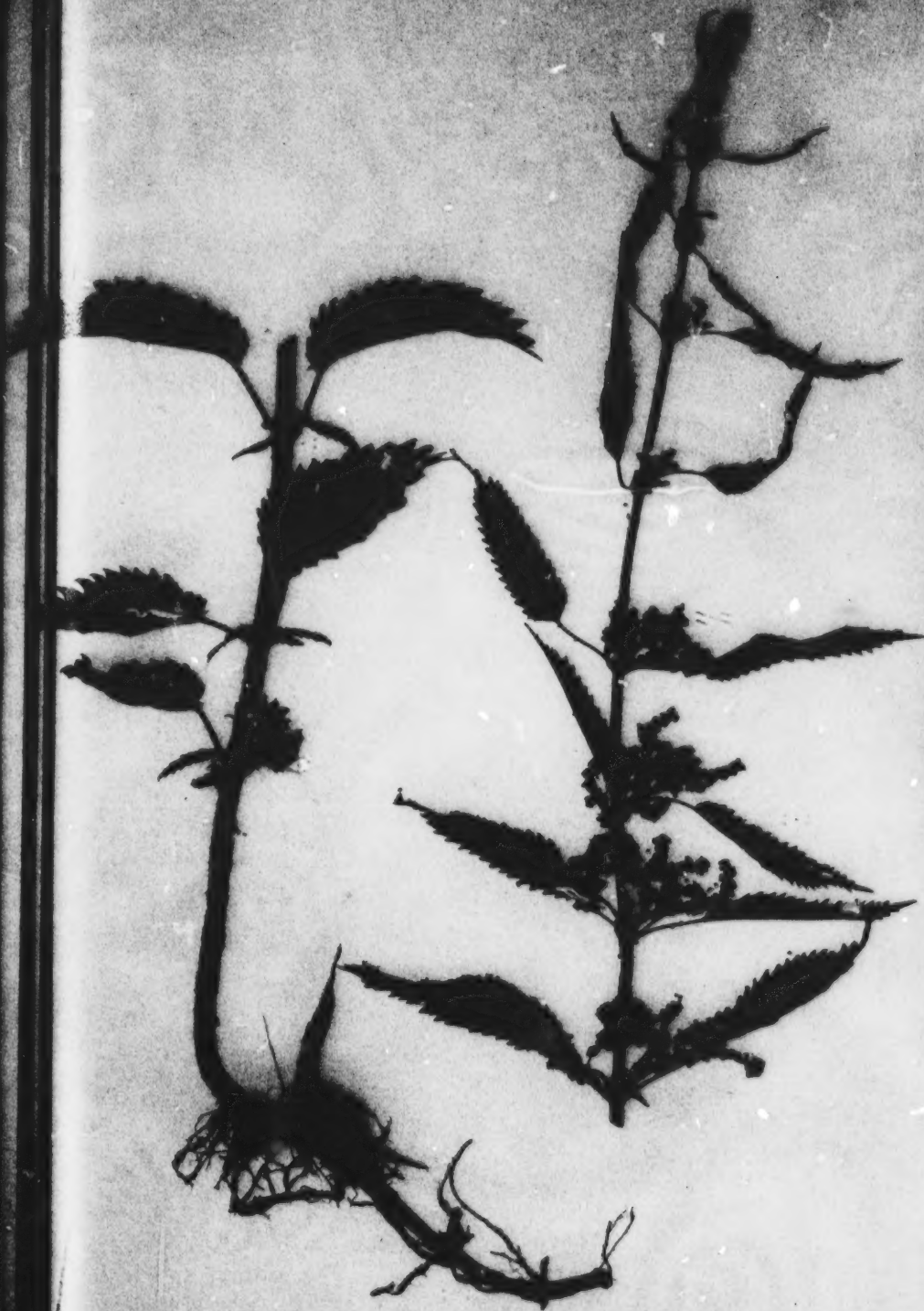
This plant is of concern mainly because of the irritant nature of the stinging hairs.

WEEDY NATURE

Not really a weed problem.

STINGING NETTLE

(Urtica dioica L.)



NOTES

PINK FAMILY
Caryophyllaceae

BABY'S-BREATH (*Gypsophila paniculata* L.)

OTHER NAMES

perennial gypsophila, tall gypsophill, maiden's-breath.

ORIGIN

Eurasia.

HABITAT

Roadsides, hayfields, pastures, mainly on coarse textured soils.

DESCRIPTION

A perennial herb spreading by seed.

Stems: much branched, to 1 m tall and 1 m wide, hairless, often with a bluish waxy bloom, nodes swollen.

Leaves: two per node on opposite sides of stem, hairless, one nerved, to 6 cm or occasionally 10 cm long and 1 cm wide.

Flowers: small and numerous, on the ends of the branches, 5 sepals fused together, about 2 mm long; petals white, 2.5-3 mm long.

Seeds: 1.5-2 mm; black, with concentric rows of bumps, ribbed cross-ways, 2-5 in a small capsule.

AGRICULTURAL CONCERN

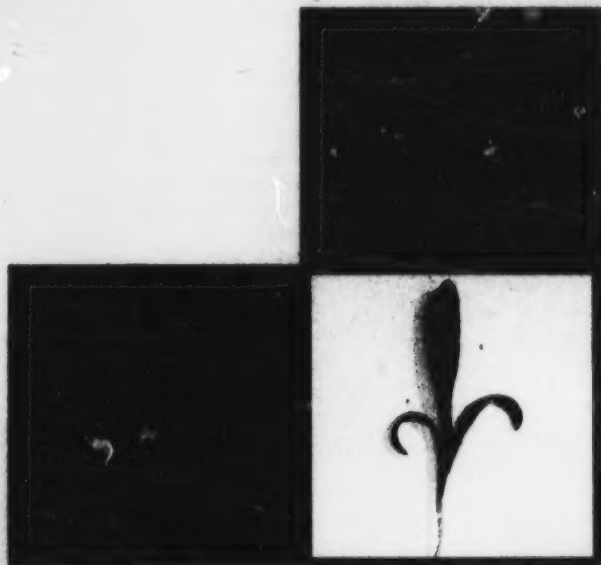
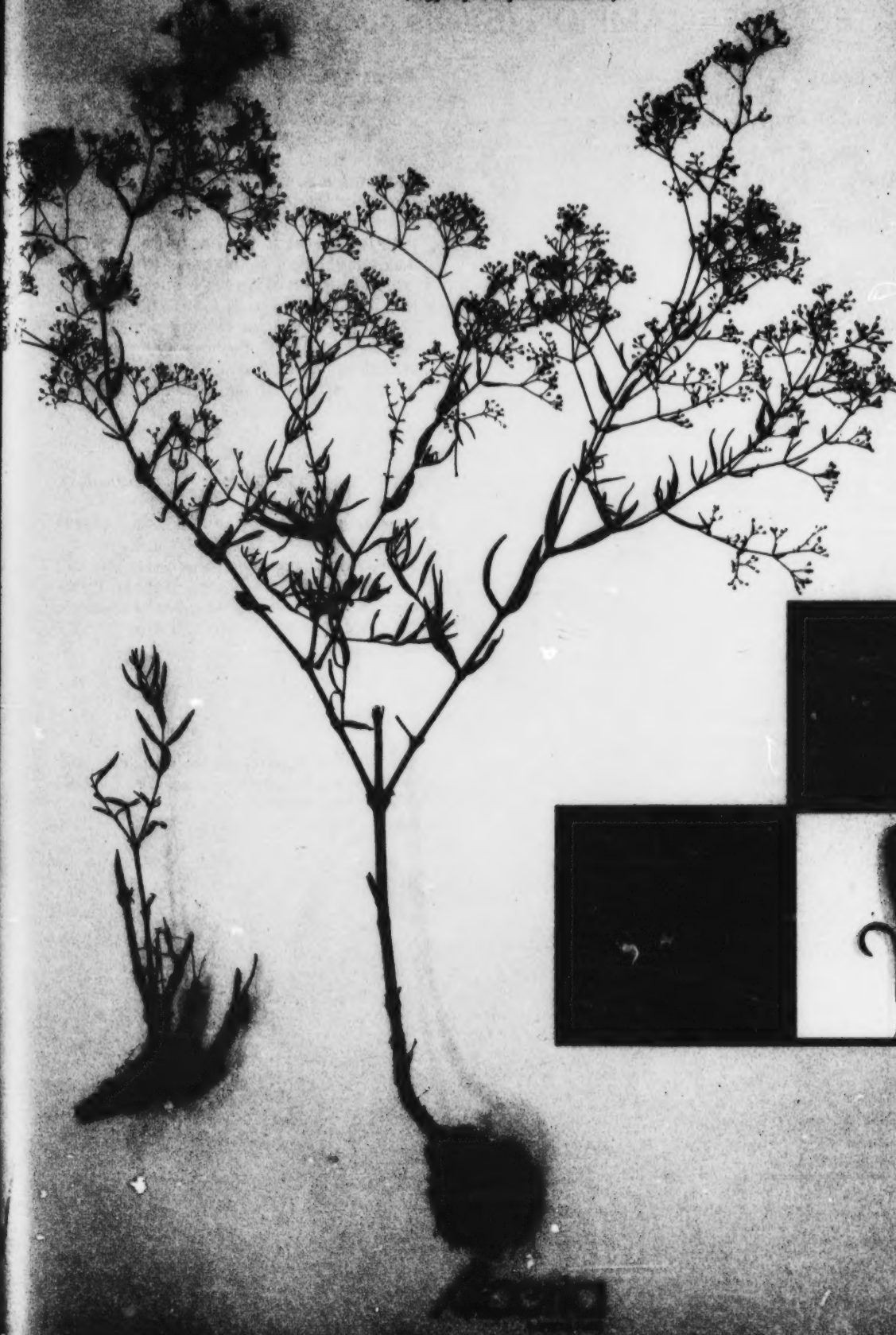
An escaped garden ornamental which is mainly a problem weed in submarginal sandy farmlands that have been seeded to introduced perennial grasses or where the native grass has been otherwise disturbed. Reduces crude protein production in hay produced in infested fields.

WEEDY NATURE

A prolific seed producer which is spread by the plant, breaking off at the base and tumbling in the wind. The roots have abundant food reserves that permit a plant to survive for more than two years.

BABY'S-BREATH

(*Gypsophila paniculata* L.)



BLADDER CAMPION (*Silene cucubalis* Wibel)

OTHER NAMES

cow-bell, rattleweed, bladder silene.

ORIGIN

Europe.

HABITAT

Roadsides, waste places, gravel pits.

DESCRIPTION

Perennial with a taproot, reproducing by seed.

Stems: up to 1 m tall, usually hairless, branched from the base, the lower branches sometimes spreading horizontally before ascending, leaf nodes swollen.

Leaves: two per node on opposite sides of the stem, long and narrow, 3-8 cm long × 1-3 cm wide, widest at the middle or towards the end away from the stem, stalkless.

Flowers: numerous in an openly branched inflorescence, 5 separate white petals 14-16 mm long with a bilobed end, 5 petals fused together into a cup around the flower and expanding to surround the mature seed capsule.

Seeds: numerous in a capsule about 1 cm long; 1-1.5 mm long, brown or grey with regular rows of warty bumps.

Note: Biennial campion (*S. cserei* Baumg.), a similar biennial to short-lived perennial found in the same habitats tends to have broader leaves, as shown by the inserted leaves in the photograph, and a less-veiny less-inflated calyx (the sepals) which narrows down to a smaller opening. The flowers of bladder and biennial campion are shown side by side so they can be compared. Biennial campion has an egg-shaped capsule in contrast to the almost spherical capsule of bladder campion.

AGRICULTURAL CONCERN

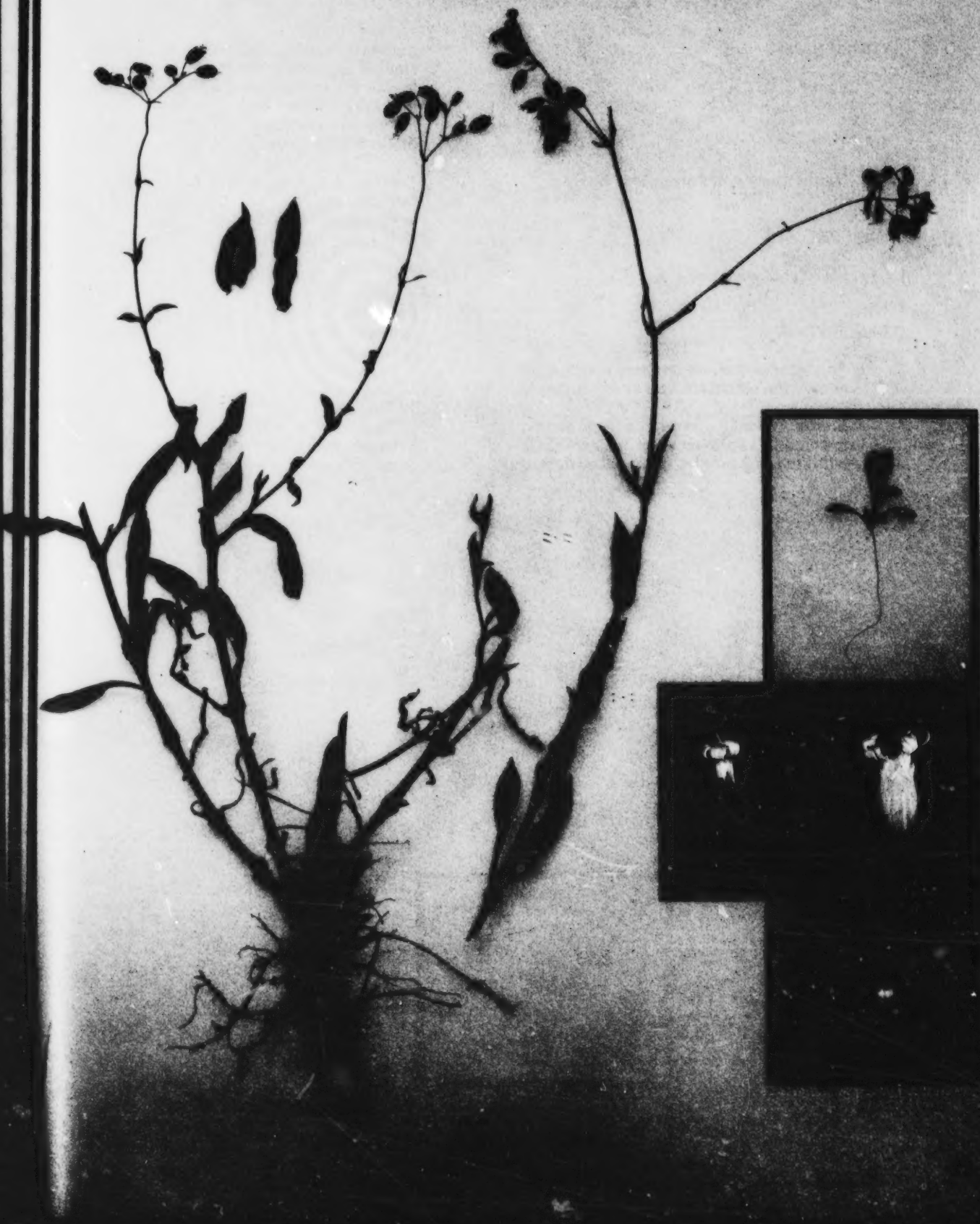
Any deep-rooted perennial weed which could become established in land not regularly cultivated is of concern, particularly with the possible advent of zero or minimum tillage farming. This weed appears resistant to most of the commonly used agricultural herbicides.

WEEDY NATURE

The plant is often found in gravel pits and the seeds are widely spread with gravel. Once established they crowd out cultivated or desirable plants.

BLADDER CAMPION

(*Silene cucubalus* Wibel)



CHICKWEED (*Stellaria media* [L.] Vill.)

OTHER NAMES

common chickweed.

ORIGIN

Naturalized from Europe.

HABITAT

Moist shaded areas.

DESCRIPTION

Annual or winter annual spreading by seed and by the stems rooting at the nodes.

Stems: mostly prostrate and spreading to sometimes almost erect, 5-50 cm long, with lines of fine hairs, and swollen nodes.

Leaves: in pairs on opposite sides of the stem at each node, the lower and middle leaves are stalked and the stalk often has a fringe of hairs along each edge, upper leaves are stalkless and are oval with pointed tips and usually about 1 cm wide.

Seeds: 1.2 mm in diameter, reddish brown to tan coloured, covered with regular rows of small bumps.

AGRICULTURAL CONCERN

Becoming a major problem in fields in northern Alberta where rainfall and soil organic matter is high.

WEEDY NATURE

Because of its tolerance of shade, it competes well with cereal and oilseed crops.

CHICKENWEEED
(*Chamaecrista nictitans*)



CORN SPURRY (*Spergula arvensis* L.)

OTHER NAMES

None known.

Leaves: in whorls of 6-10, at each node, thread-like, 1 mm thick, 20-50 mm long.

ORIGIN

Naturalized from Europe.

Flowers: small, with white petals about 3 mm long, borne singly on the ends of branched stalks.

HABITAT

Cultivated fields and waste places. Usually associated with light or acid soils.

Seeds: blackish, 1-1.5 mm in diameter, with a narrow wing margin, usually with minute whitish projections.

DESCRIPTION

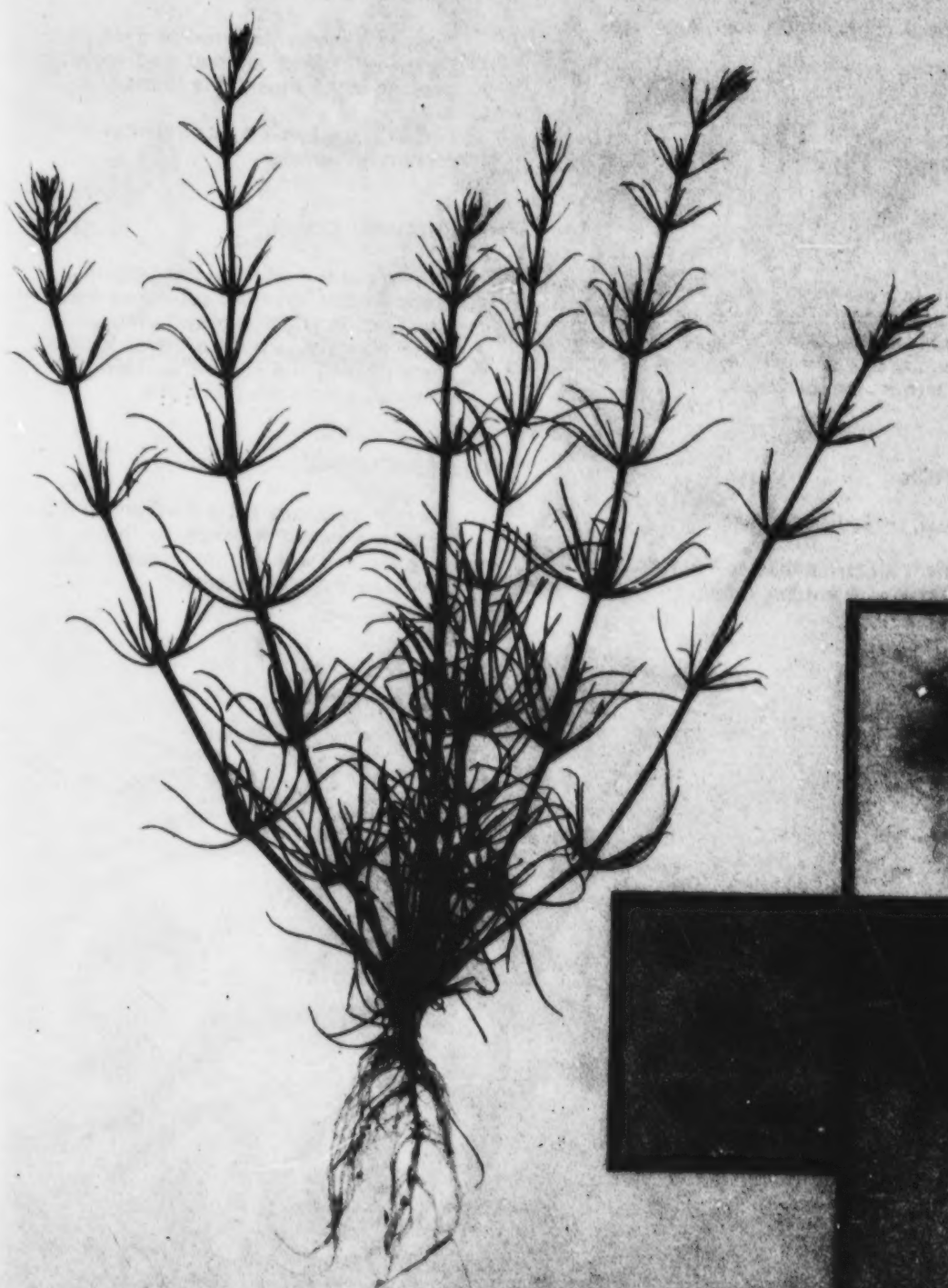
Annual, spreading by seeds.

Stems: several from the base of the plant, to 40 cm tall, usually hairless or almost so and occasionally sticky, with swollen nodes.

AGRICULTURAL CONCERN

Has become a serious problem since the widespread use of 2,4-D and MCPA has removed other weeds which formerly kept it in check; it is now spreading because it is not susceptible to these herbicides.

CORN SPURRY
(*Spergula cretensis* L.)



COW COCKLE (*Saponaria vaccaria* L.)

OTHER NAMES

cow herb, china cockle, cow soapwort.

ORIGIN

Eurasia.

HABITAT

Chiefly in grain fields, occasionally in new alfalfa and clover seedings, but also waste places, roadsides, and railway grades. It appears to be a problem only in the brown and dark brown soil zones.

DESCRIPTION

Annual, spreading by seed.

Stems: erect, hairless, to 1 m tall, much branched with swollen nodes.

Leaves: opposite and clasping the stem, hairless, 2-8 cm long.

Flowers: showy, pale red or deep pink 5-petalled, funnel-shaped and loosely grouped at the ends of the stems.

Seeds: rough, black, nearly round, 2-2.5 mm in diameter.

AGRICULTURAL CONCERN

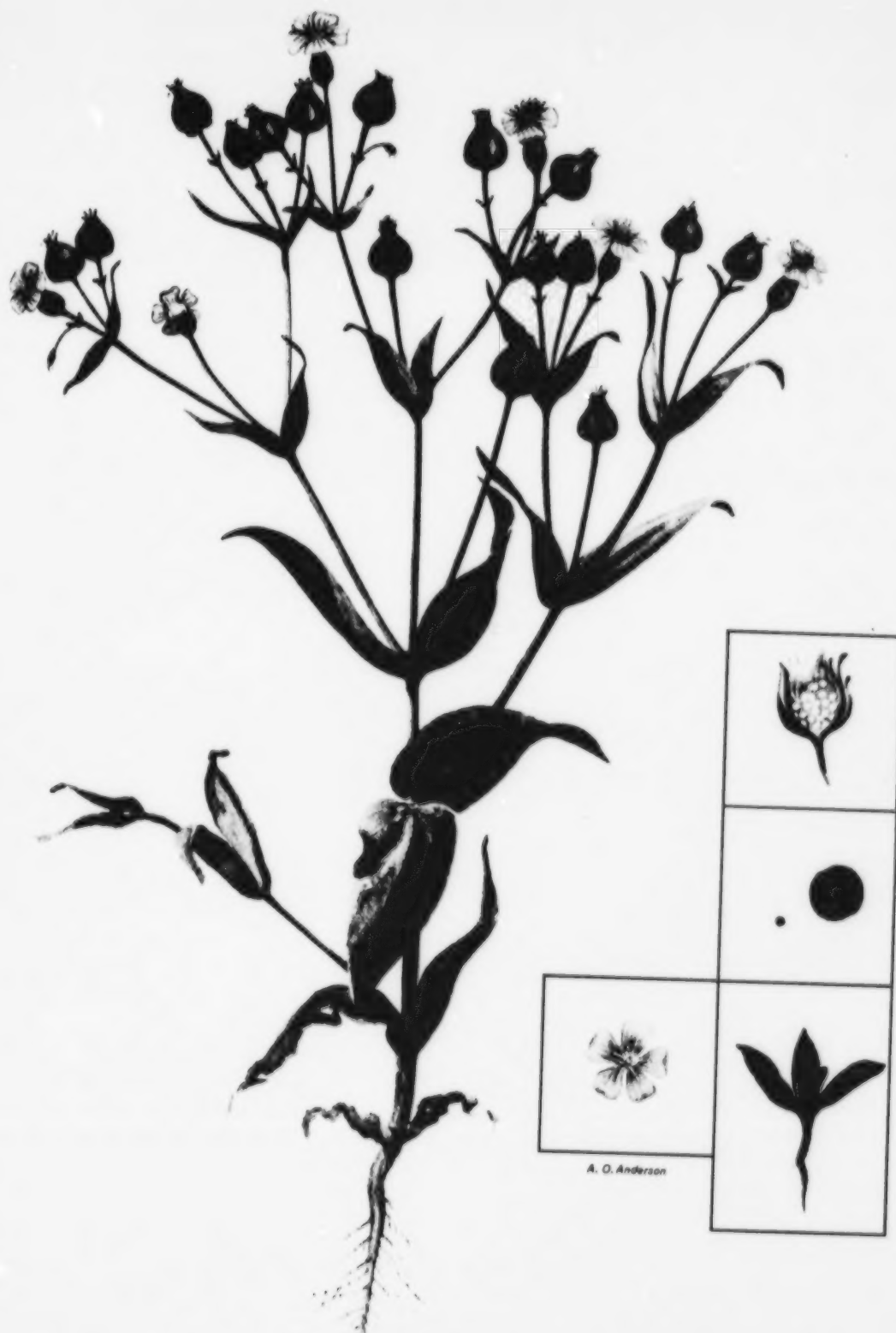
All parts of the plant and especially the seeds contain the toxic substance saponin. Thus, in addition to reducing yields these plants also pose a threat to livestock grazing the stubble or being fed screenings from infested fields.

WEEDY NATURE

Cow cockle is resistant to 2,4-D and MCPA and as a result it tends to thrive on cropped land where other weeds are controlled by these chemicals.

COW COCKLE

(*Saponaria vaccaria* L.)



Plates prepared by
Saskatchewan Department of Agriculture
in cooperation with
Saskatchewan Branch of the Canadian Seed Growers' Association
Rapeseed Growers' Association of Saskatchewan
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KNAWEL (*Scleranthus annuus* L.)

OTHER NAMES

annual knawel.

Leaves: stalkless, in pairs on opposite sides of the stem, 1-1.5 mm wide and 5-20 mm long, with a few hairs on the margins near the base.

ORIGIN

Naturalized from Europe.

Flowers: small and green, in small groups at the bases of the upper leaves, no petals, sepals fused at the bases into a hard cup surrounding the seed.

HABITAT

Cultivated fields and waste places.

Seeds: one per flower, with the sepals persisting around the seed.

DESCRIPTION

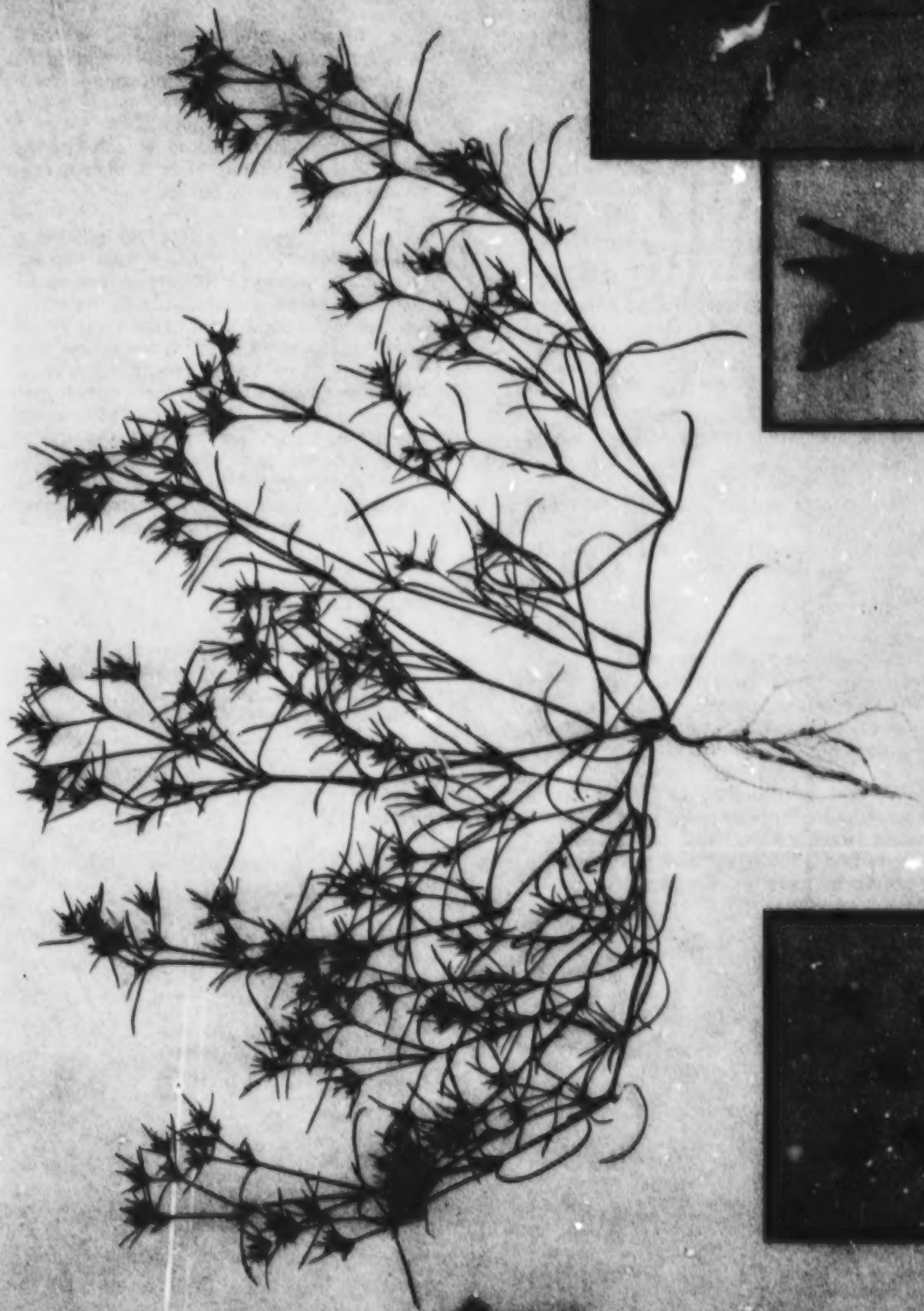
Annual, winter annual or occasionally biennial spreading by seed.

Stems: weak and spreading up to 25 cm high, much branched from the base of the plant, with swollen nodes.

AGRICULTURAL CONCERN

Spreading in grain fields in the north-eastern part of the province. Difficult to control.

KNAWEL
(*Scleranthus annuus* L.)



Academy

NIGHT-FLOWERING CATCHFLY (*Silene noctiflora* L.)

OTHER NAMES

sticky cockle, night flowering silene.

ORIGIN

Europe.

HABITAT

Grain fields, cultivated ground and waste places.

DESCRIPTION

Annual or winter annual reproducing by seed.

Stems: 1-3 usually sparingly branched stems per plant, up to 1 m tall with swollen nodes, covered with long hairs, glandular and sticky on the upper part of the plant.

Leaves: in pairs from each node, more or less covered with short stiff hairs, 5-12 cm long and to 4 cm wide, widest towards mid-length or slightly beyond mid-length, lower leaves with broad stalks and the upper ones almost stalkless.

Flowers: on individual stalks in a branched inflorescence, 5 petals 20-35 mm long, white or occasionally pinkish, bilobed at the end with two appendages where the petal emerges from the calyx; the sepals-

are fused together to form a 10-nerved 5 toothed cup-shaped calyx surrounding the flower; both sexes are present in each flower.

Seeds: many in a dry capsule that opens with six teeth, about 1 mm long, with regular rows of warty bumps.

Note: white cockle (*Lychnis alba*) is a similar plant that is often mistaken for night-flowering catchfly. However, white cockle is a perennial that lacks the stickiness on the upper parts of the plant. White cockle has two kinds of flowers, one with ovaries, female seed producing organs, and one with stamens, male pollen producing organs, while in night-flowering catchfly each flower has both sexes. The veins on the calyx are less prominent in white cockle and the ovary usually has 5 styles compared to the 3 normally found on night-flowering catchfly ovaries.

AGRICULTURAL CONCERN

Sometimes an impurity in clover or forage seed. Because of its pungent flavour and woody texture it is objectionable to livestock, whether as pasture or in cured hay. Difficult to clean from clover seed.

WEEDY NATURE

A prolific seed producer which can spread rapidly by seed.

NIGHT - FLOWERING CATCHFLY
(*Silene noctiflora* L.)



WHITE COCKLE (*Lychnis alba* Mill.)

OTHER NAMES

white campion, evening lychnis, evening campion.

ORIGIN

Eurasia.

HABITAT

Roadsides, waste places, hay fields and grain fields.

DESCRIPTION

Fleshy rooted biennial or short-lived perennial reproducing by seed.

Stems: several from the branched crown of the plant, usually unbranched, with swollen nodes, covered by short stiff hairs, up to 1.1 m tall.

Leaves: in pairs from each node, narrowly oval-shaped, broadest near the middle or towards the free end, to 2 cm wide and 10 cm long, lower leaves stalked and the upper ones stalkless.

Flowers: arranged on individual stalks in a branched inflorescence; two kinds, one with ovaries that produce the seeds

and one with stamens to produce the pollen, normally only one kind of flower is found on each plant; the petals are white, 20-30 mm long, with appendages where they emerge from the calyx and bilobed on the end; the sepals are fused into a cup-shaped calyx surrounding the flowers, in the staminate male flowers the calyx is 10 nerved while in the pistillate seed producing female flowers the calyx is 20 nerved.

Seeds: numerous in capsules opening by 10 teeth, about 1.5 mm long, covered with regular rows of warty bumps.

Note: White cockle is often mistaken for night-flowering catchfly (*Silene noctiflora*). However it is not sticky like night-flowering catchfly which also has all flowers with both sexes rather than two kinds of flowers. The ovary of white cockle has 5 styles compared to the 3 styles found in night-flowering catchfly.

AGRICULTURAL CONCERN

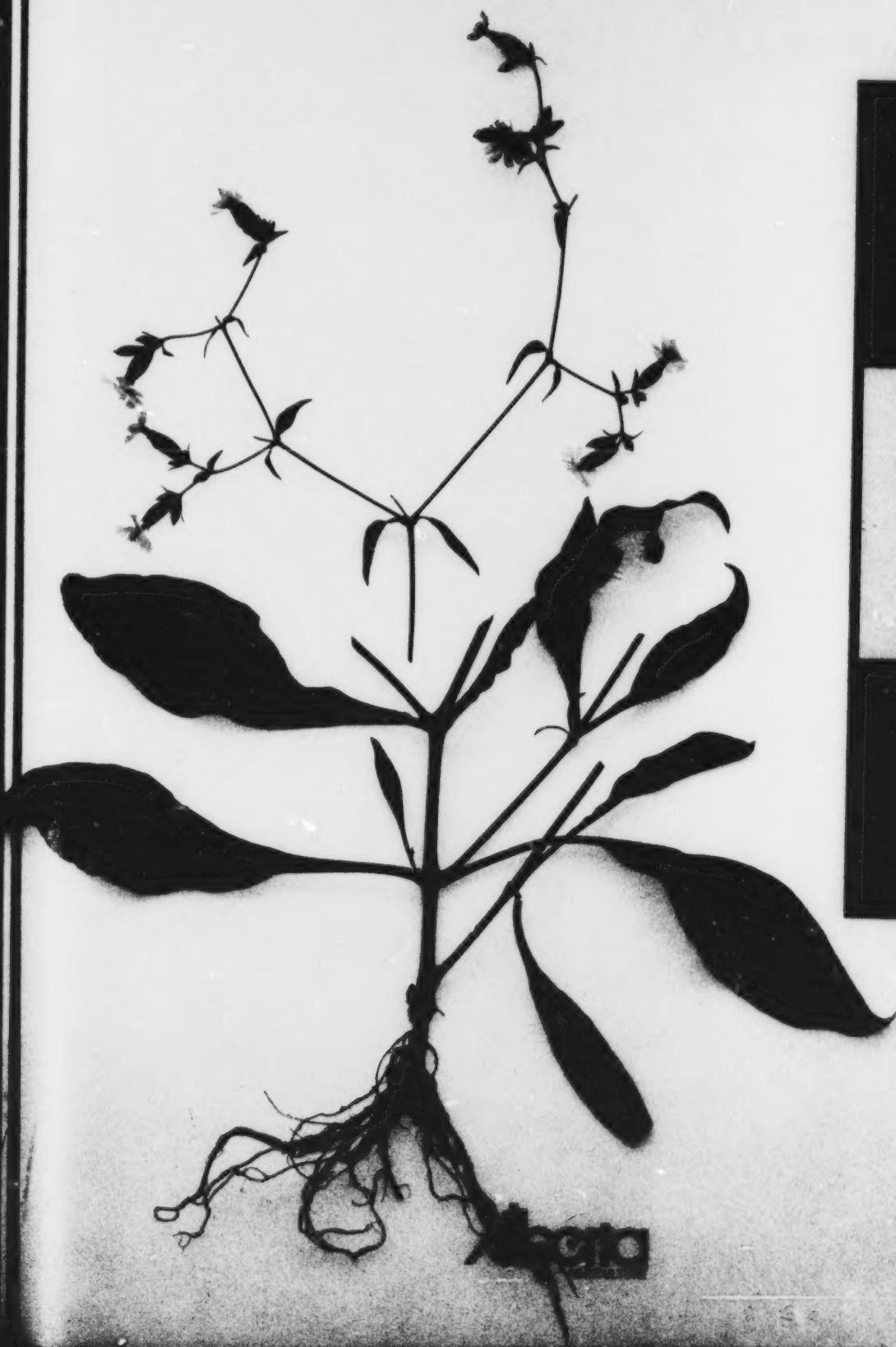
Seeds are common impurity in clover and forage and once established is a nuisance in any field crop.

WEEDY NATURE

A prolific seed producer that can spread rapidly.

WHITE COCKLE

(*Lychnis alba* Mill.)



NOTES

PLANTAIN FAMILY

Plantaginaceae

BROAD-LEAVED PLANTAIN (*Plantago major* L.)

OTHER NAMES

common plantain, grand plantain, greater plantain, major plantain, dooryard plantain, English plantain, birdseed plantain, rippleseed plantain, way bread, white-man's-foot.

ORIGIN

Eurasia, some forms possibly native.

HABITAT

Roadsides, lawns, yards, waste places.

DESCRIPTION

A fibrous rooted perennial spreading by seed.

Stems: leafless, to 60 cm tall, hairless, about $\frac{1}{2}$ of the stem forms the flowering spike.

Leaves: all basal, prominently ribbed by the parallel main veins, to 20 cm long $\times$ 12 cm wide or occasionally larger under favorable growing conditions, hairless or occasionally with a few hairs.

Flowers: small 2.5 mm long, petals white, densely crowded in a long narrow spike, each one subtended by a brownish bract 2-4 mm long.

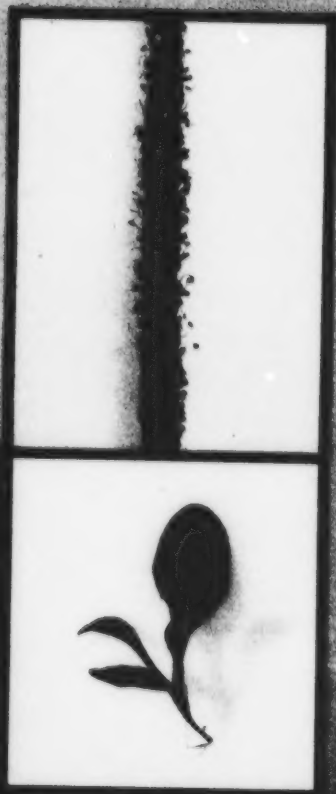
Seeds: 1 $\times$ 0.6 mm, oval or somewhat irregular in shape, with one concave surface, rough textured, brown or black; 8-16 in a small capsule 2-4 mm long that opens by breaking apart around the middle.

AGRICULTURAL CONCERN

Not a serious problem in cropland. In lawns and yards it will suppress the plants growing nearby.

WEEDY NATURE

Mostly a weed of lawns, yards and traffic areas and is propagated by seed.



NOTES

POTATO FAMILY
Solanaceae

BLACK HENBANE (*Hyoscyamis niger* L.)

OTHER NAMES

henbane.

ORIGIN

Europe.

HABITAT

Roadsides, waste places, disturbed ground.

DESCRIPTION

A strongly-scented, taprooted, annual or biennial plant spreading by seed.

Stems: coarse and branched, to 1 m or occasionally taller, covered with long sticky hairs.

Leaves: stalkless, irregularly lobed with triangular lobes, usually more or less covered with long sticky hairs; basal leaves the largest, to 30 cm long by 15 cm wide; stem leaves alternate — one per node, reduced in size up the stem.

Flowers: produced singly at the bases of the upper leaves, stalks 2 mm or less;

petals fused into a tube 2.5-4.5 cm long and almost as wide at the end, with a conspicuous network of purple veins on a yellowish to greenish-yellow background; sepals fused into an urn-shaped calyx that persists around the seed capsule.

Seeds: many in a capsule 1-1.5 cm long that opens by means of a lid that falls off the top; $1.7 \times 1.2 \times 1.8$ mm, more or less kidney-shaped to almost oval, with a conspicuous network of fine ridges, light brownish-grey in colour.

AGRICULTURAL CONCERN

All parts of the plant are poisonous due to the presence of toxic alkaloids. However, poisoning is rare because of the unpalatability of the plants to both man and livestock. The plant is occasionally grown as a source of the narcotics hyoscyamine and scopolamine.

WEEDY NATURE

Not a problem weed because the upright growth habit and the biennial life cycle of most of the plants mean it is easily controlled by cultivation or mowing.

BLACK HENBANE

(*Hyoscyamus niger* L.)



HAIRY NIGHTSHADE (*Solanum sarachoides* Sendt.)

OTHER NAMES

cupped nightshade.

ORIGIN

South America.

HABITAT

Moist soils in fields, gardens, roadsides and disturbed sites.

DESCRIPTION

An annual spreading by seed.

Stems: much branched, to 50 cm tall, covered with long, often sticky, hairs that grow perpendicularly to the stem.

Leaves: alternate, one per node, stalked, hairy along the stalk and the main veins on the lower surface, sometimes hairy over one or both surfaces as well, more or less triangular in shape with wavy margins, light green in colour.

Flowers: in groups of 3-9 from the bases of the leaf stalks, 5-8 mm wide; petals white, fused into a cup-shaped corolla; sepals fused into a cup-shaped calyx that

grows as the fruit matures, cupping the lower ½ of the berry.

Seeds: several in a greenish or yellowish berry, $1.3 \times 1.2 \times 0.6$ mm, almost circular in outline, light brown in colour.

Note: Black nightshade (*Solanum nigrum* L.), a similar plant, is also found in Alberta. It can be distinguished from hairy nightshade by its lack of hairs or when any hairs are present they lay flat along the stems and leaves rather than spread at right angles to the stems and leaves as the hairs of hairy nightshade do. In black nightshade the mature berry is black and the calyx does not expand and cup the berry as it does in hairy nightshade.

AGRICULTURAL CONCERN

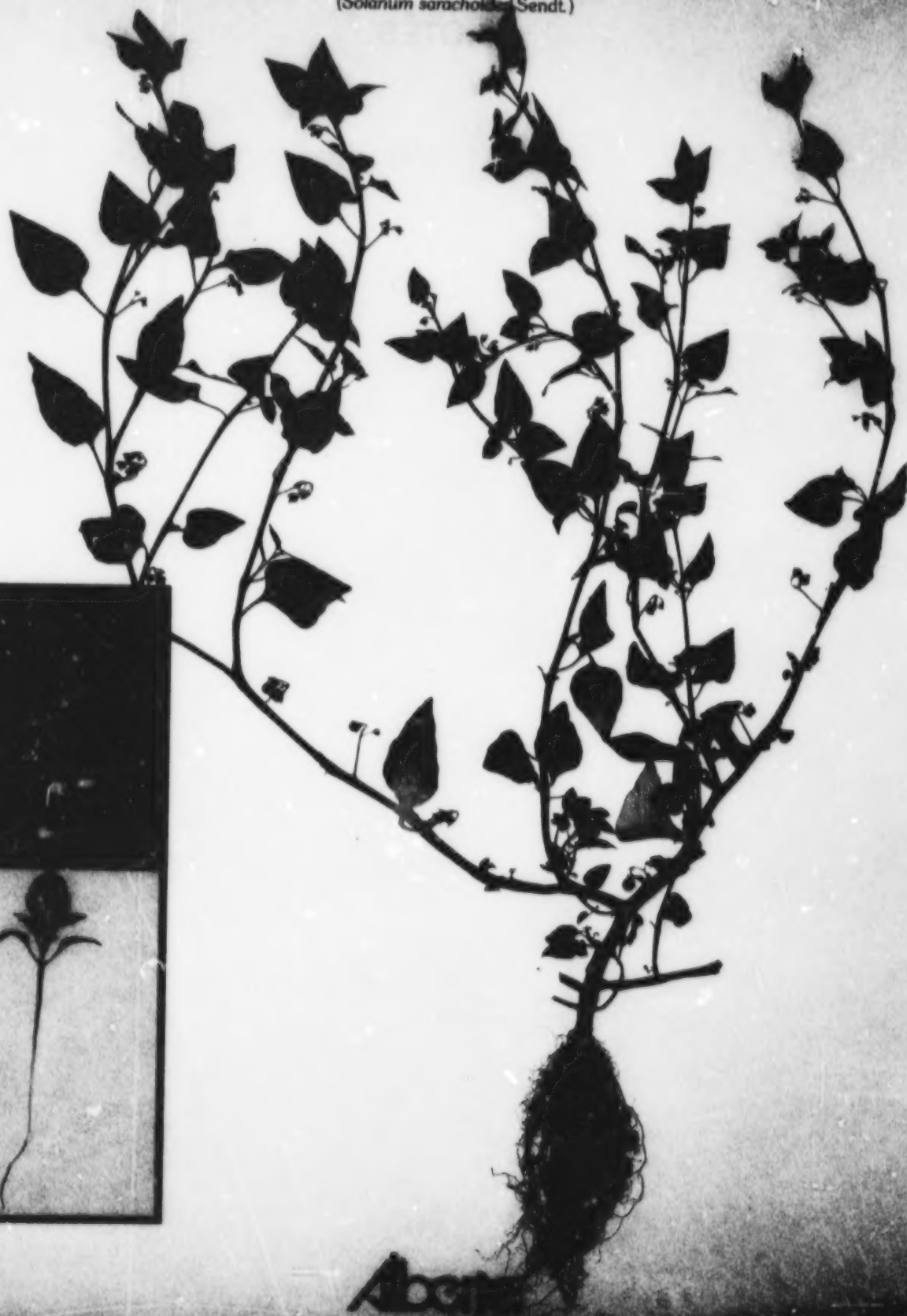
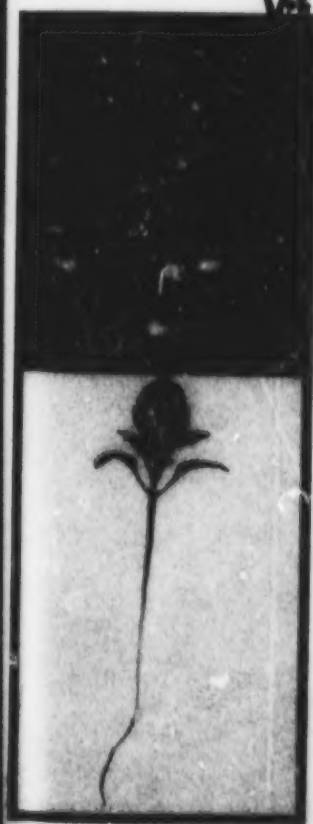
Not known to be a problem in cropland. The mature fruits of both species are considered edible, but may be harmful to some people. Immature fruits and foliage are poisonous due to the presence of toxic alkaloids.

WEEDY NATURE

Not yet reported as an aggressive or weedy plant.

HAIRY NIGHTSHADE

(*Solanum sarachoides* Sendt.)



Abco

NOTES

PURSLANE FAMILY

Portulacaceae

PURSLANE (*Portulaca oleracea* L.)

OTHER NAMES

wild portulaca, pusley, low pigweed.

ORIGIN

Southern Europe.

HABITAT

Gardens, waste places, bare soil, most common in the drier portions of the province.

DESCRIPTION

Annual spreading by seed.

Stems: fleshy, to 30 cm long, mostly prostrate and spreading occasionally more or less erect, hairless, often reddish coloured.

Leaves: fleshy, hairless, alternate (one per node), usually crowded close together at the ends of the branches, 1-3 cm long by 1-1.5 cm wide, wedge-shaped at the base, stalkless or nearly so, usually widest near the rounded end.

Flowers: usually inconspicuous in groups of 1-3 at the bases of the leaves, 3-4 mm long, petals yellow, usually hidden by the closed sepals, occasionally opening for a short time on sunny mornings to show bright yellow star-shaped flowers 6-8 mm in diameter.

Seeds: several in a small capsule which opens by breaking apart horizontally around the middle, black, 1 mm or less in diameter, covered with small bumps.

AGRICULTURAL CONCERN

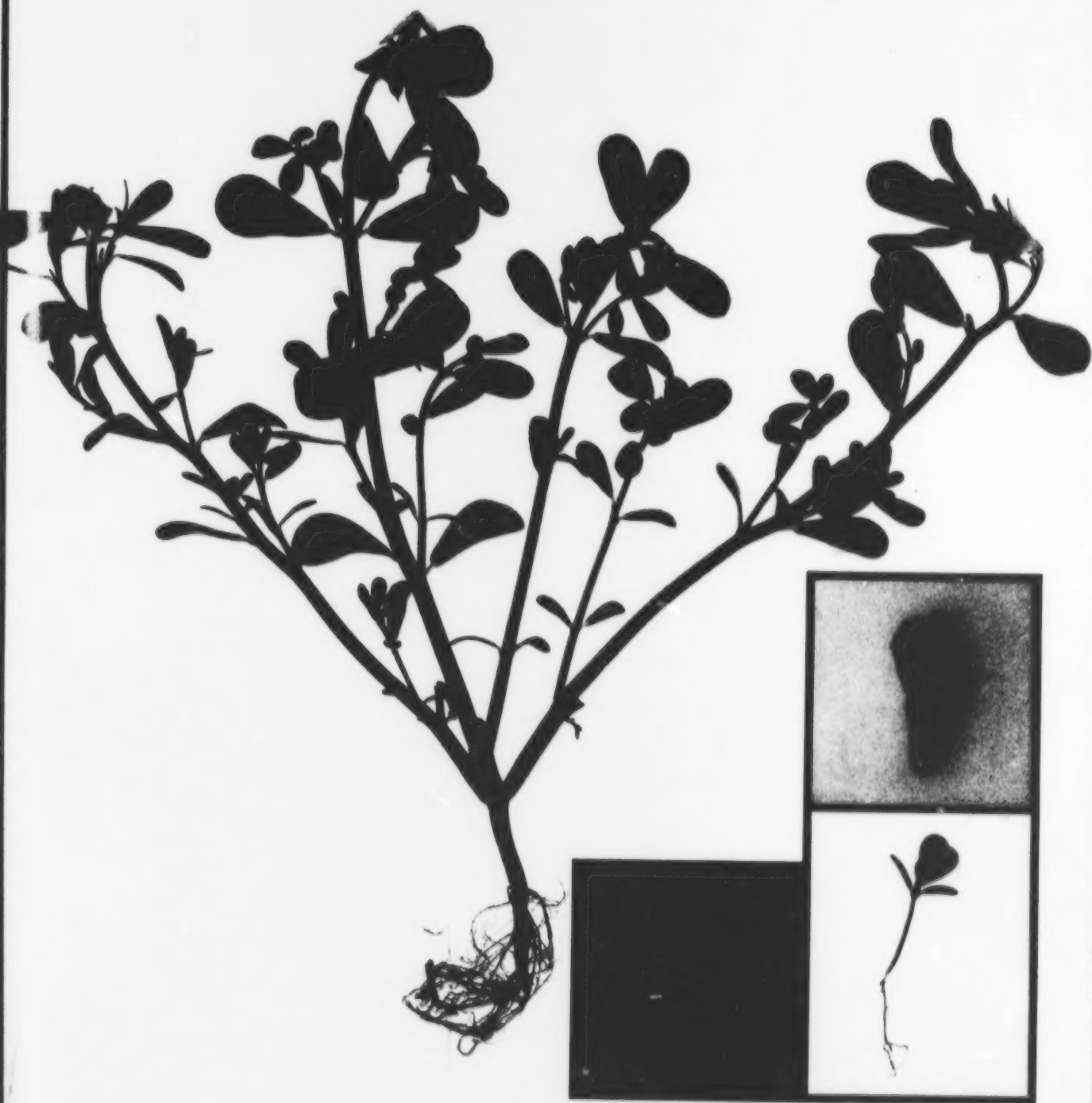
More of a concern in home gardens and home grounds or in vegetable plantings than in generally grown field crops.

WEEDY NATURE

A prolific seed producer. It is difficult to control by cultivation because plants with flower buds have enough water stored in the stems and leaves to produce seeds even after they have been cut off from their roots.

PURSLANE

(*Portulaca oleracea* L.)



NOTES

ROSE FAMILY
Rosaceae

ROUGH CINQUEFOIL (*Potentilla norvegica* L.)

OTHER NAMES

rough-fruited cinquefoil, Norwegian cinquefoil.

ORIGIN

Native and possibly some forms introduced from Europe.

HABITAT

Moist soils, along roadsides, irrigation ditches, pastures and waste places.

DESCRIPTION

A taprooted annual, biennial or occasionally short-lived perennial spreading by seed.

Stems: branched, to 80 cm tall, usually covered with long stiff hairs growing perpendicularly to the stem.

Leaves: basal leaves long stalked, compound, with 3 leaflets, all attached at the end of the leaf stalk; stem leaves alternate, one per node, leaf stalks reduced in length upwards, upper leaves nearly stalk-

less, compound with 3 leaflets; leaflets oval with coarsely toothed margins, leaf stalks and leaflets hairy with long hairs that usually grow perpendicularly to the surface of the leaf.

Flowers: in small clusters from the bases of the stem leaf-stalks, petals 5, yellow, about as long as the sepals, sepals 5, but with 5 bracts just below the sepals, giving the appearance of 10 sepals.

Seeds: many per flower, borne on the surface of the receptacle, $0.9 \times 0.7 \times 0.4$ mm, roughly oval-shaped but flattened along one edge, with prominent longitudinal branching ribs, yellowish brown in colour.

AGRICULTURAL CONCERN

Not a problem in cultivated land due to its biennial growth habit. May become aggressive in waste areas and roadsides.

WEEDY NATURE

Reproduces by seed in waste areas where there is some soil disturbance to facilitate seed germination.



Alberta

NOTES

SPURGE FAMILY
Euphorbiaceae

LEAFY SPURGE (*Euphorbia esula* L.)

OTHER NAMES

wolf's milk, leafy euphorbia.

ORIGIN

Naturalized from Europe.

HABITAT

Sandy banks, fields, roadsides, riverbanks.

DESCRIPTION

Perennial spreading by seeds and creeping rootstalks.

Stems: to 1 m tall, hairless or with a few hairs near the top, with a milky greenish-white sap.

Leaves: alternate (one per node), numerous and stalkless 3-7 cm long and less than 5 mm wide, a whorl (several leaves from one node) of leaves marks the start of the flowering portion of the stem (the inflorescence). The bracts (modified leaves) of the inflorescence are opposite (2 per node) about 1 cm wide and 1.2 cm long with a sharp point.

Flowers: lack petals and sepals, clustered with 1 female (seed-bearing) flower and 3 male (pollen-bearing) flowers forming a group with a pair of bracts (modified leaves) surrounding the cluster so it resembles a single flower; flowering stalks may also be produced from the bases of leaves below the main inflorescence.

Seeds: three per seed capsule, about 2 mm long, smooth, greyish to yellow or brownish, usually with a yellow bump near the base.

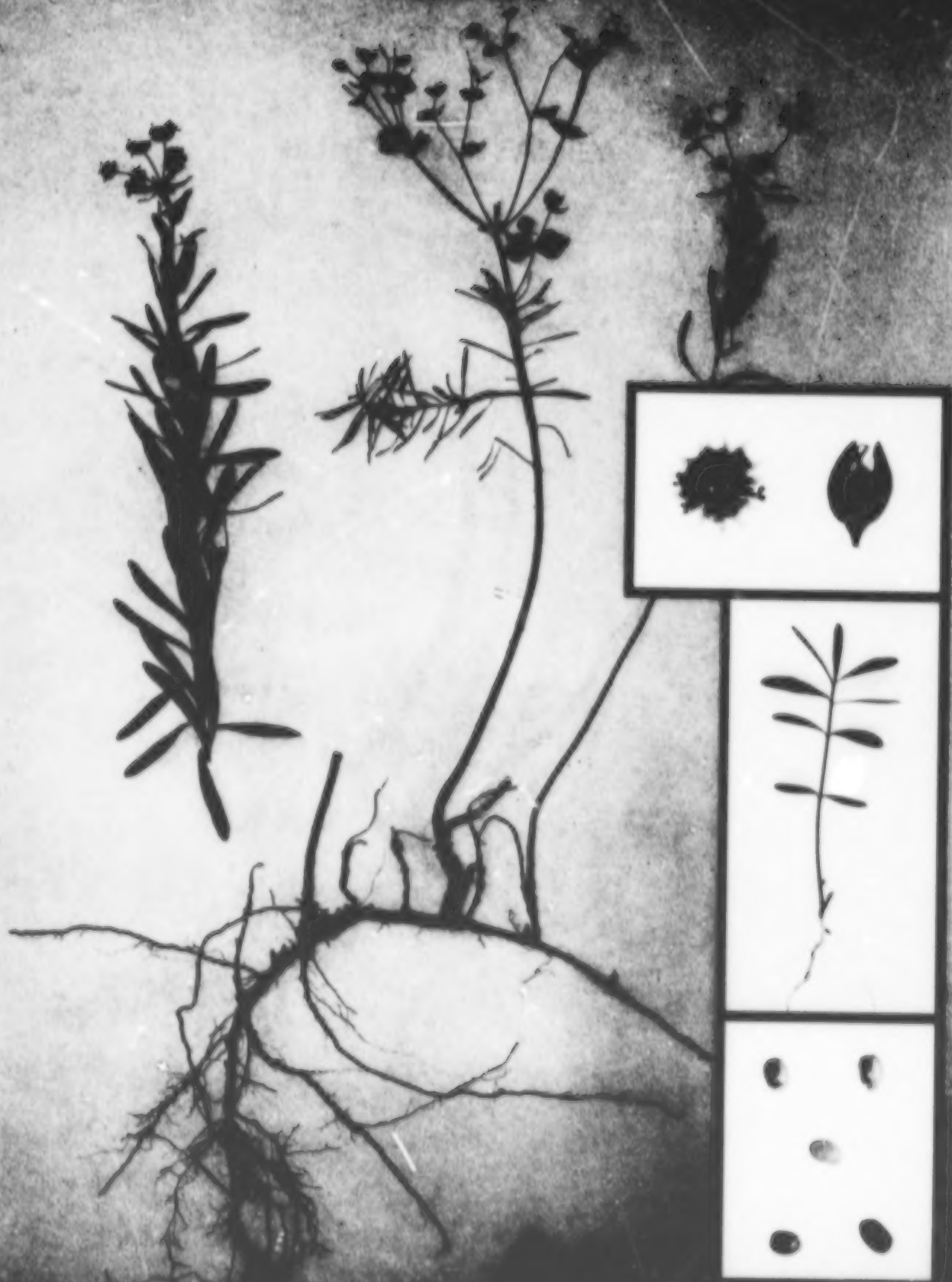
AGRICULTURAL CONCERN

The creeping root system stores food reserves and sprouts readily, making leafy spurge a difficult weed to control in cropland. However, it is more of a problem in pastures, particularly on sandy and marginal soils.

WEEDY NATURE

A deep-rooted perennial that can reproduce from root fragments at a depth of 1 m in the soil. It is difficult to eradicate because of this.

LEAFY SPURGE
Euphorbia corollata L.



NOTES

SUNFLOWER FAMILY

Compositae

ABSINTH (*Artemisia absinthium* L.)

OTHER NAMES

absinthe, absinthium, wormwood, mad-
derwort.

ORIGIN

Europe.

HABITAT

Roadsides, fence rows, farmyards, pastures
and waste places.

DESCRIPTION

Perennial with a woody crown and repro-
ducing by seed. Has a very characteristic
odour.

Stems: several from a branched crown,
usually unbranched except in the inflor-
escence, 0.4-1.2 m tall, covered with fine
hairs when young but tending to become
hairless when mature.

Leaves: silvery, hairy on both surfaces
but becoming more or less hairless on the
upper surface when mature; basal leaves
long stalked, 2-3 times pinnatifid (bran-
ched compoundly 2-3 times into narrow
segments), the segments 1.5-4 mm wide,

in outline the leaf blade is 3-8 cm long and
almost as wide; lower stem leaves simi-
lar, leaves gradually reduced in size and
complexity of branching upwards with the
uppermost leaves simple, lance-shaped,
1-2 cm long and almost stalkless.

Flowers: small, 1-2 mm long, grouped
into heads 2-3 mm high and 3-4 mm wide,
each head surrounded by an involucre of
greyish bracts, each head has two kinds
of flowers, an outer ring of pistillate —
with ovaries only — flowers and a central
group with both ovaries and stamens, they
are attached to a receptacle covered with
long hairs.

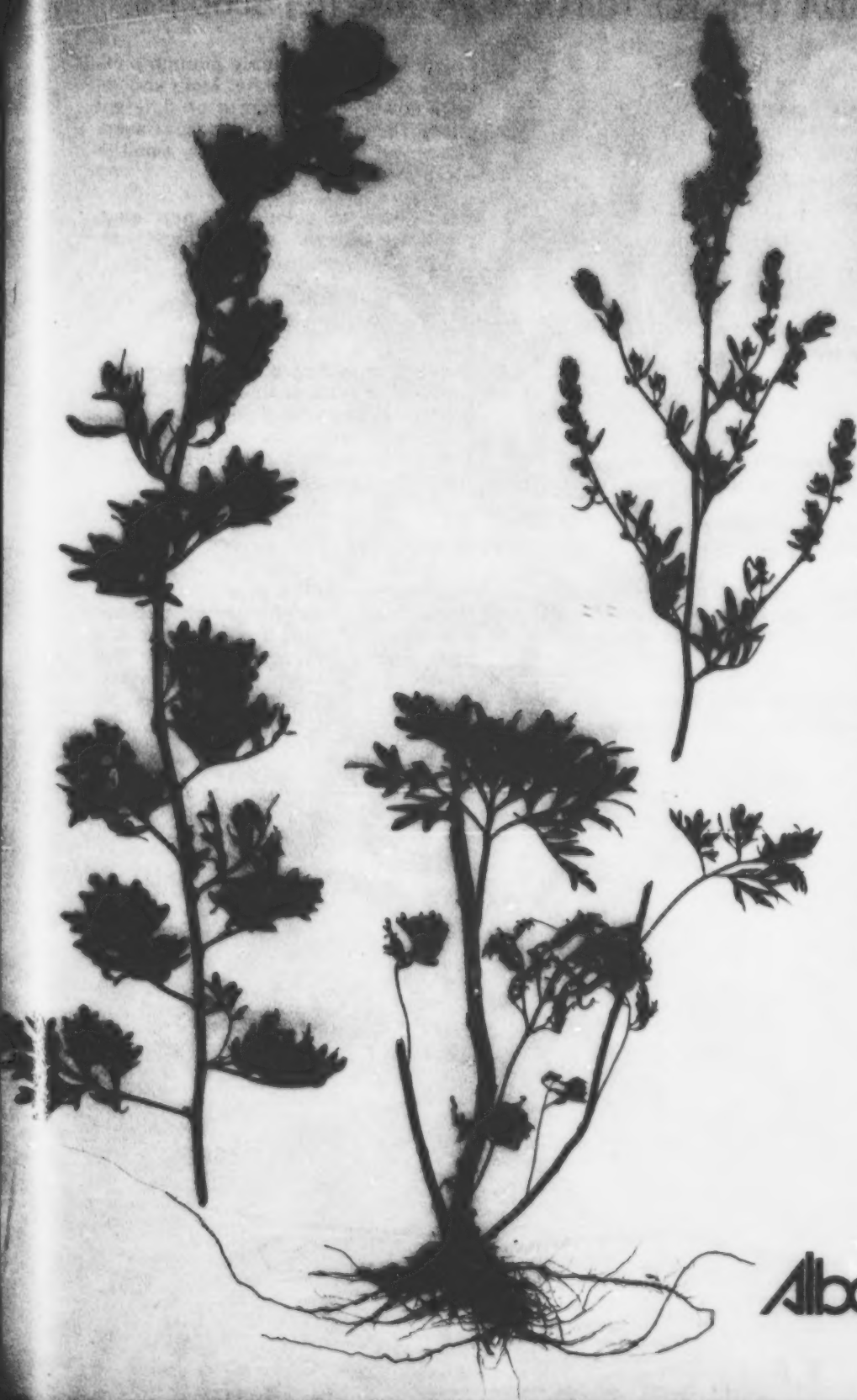
Seeds: one per flower, hairless, about
1 mm long by 0.25 mm wide, widest near
the top and tapering to the point of at-
tachment.

AGRICULTURAL CONCERN

Not a very prevalent weed but can increase
quite rapidly if pastures are overgrazed.
Not a palatable species.

WEEDY NATURE

A perennial that can be persistent in pas-
tures once established.



Alberta
AGRICULTURE

CANADA THISTLE (*Cirsium arvense* [L.] Scop.)

OTHER NAMES

creeping thistle, field thistle.

ORIGIN

Eurasia.

HABITAT

Cultivated fields, pastures, roadsides, rights-of-way, waste areas.

DESCRIPTION

A perennial, reproducing by seed and by freely sprouting horizontal root stalks.

Stems: erect, hollow with clear sap, to 1.5 m tall, branching only at the top.

Leaves: are alternate, oblong or lance-shaped, slightly clasping, deeply and irregularly cut into segments with sharp spines.

Flowers: develop in heads resembling single flowers at the ends of the branches.

Colour varies from purple through pinkish to occasionally white. Male and female flowers usually occur on different plants. The male flowers produce no seed. The flower heads are relatively small — about ½ inch across.

Seeds: tan in colour, 3.5 mm long, slightly curved, with a tuft of loosely attached downy white hairs.

AGRICULTURAL CONCERN

The freely sprouting root stalks store large amounts of food enabling the plant to survive relatively long periods of intensive cultivation so that Canada thistle is hard to control in both cultivated fields and pasture and hay crops.

WEEDY NATURE

Thistles grow vigorously and have extensive underground root systems that spread below the normal cultivation depth and from which shoots develop rapidly. They produce many seeds which are widely scattered and germinate over an extended period.

CANADA THISTLE

(*Cirsium arvense* (L.) Scop.)



Plates prepared by
Saskatchewan Department of Agriculture
in cooperation with
Saskatchewan Branch of the Canadian Seed Growers' Association
Rapeseed Growers' Association of Saskatchewan
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COCKLEBUR (*Xanthium strumarium* L.)

OTHER NAMES

clotbur, sheepbur, ditchbur, burweed, buttonbur, hedgehog-burweed.

Includes all other Canadian species of *Xanthium* except *X. spinosum* spiny cocklebur.

ORIGIN

Probably native to warm-temperate and sub-tropical North America.

HABITAT

Roadsides, wastelands, disturbed ground, and especially slough margins, stream banks and flood plains where the water is receding.

DESCRIPTION

Annual spreading by seed.

Stems: to 1.5 m tall, branched, hairless to more or less hairy with the hairs lying flat along the stem.

Leaves: alternate one per node, long stalked, broadly triangular in outline and shallowly lobed with a more or less heart-shaped base, blades with a rough surface.

Flowers: grouped into heads resembling single flowers; heads of two kinds, the upper ones with several flowers that produce only pollen-staminate — the involucre bracts surrounding the head in 1-3 series; the seed-bearing — or pistillate, heads are not typical of the family, they have only two flowers per head and the involucre bracts of the head are fused together to form a woody spine-covered bur.

Seeds: 8-15 mm × 5-7 mm × 2 mm, black with longitudinal ribs, one per flower, normally two per flower head; burs 1.5-3 cm long × 1-2 cm in diameter covered with long hooked prickles, green to brown in colour.

AGRICULTURAL CONCERN

The seeds and seedlings of this species are poisonous, however, the seeds rarely cause trouble since they are enclosed in woody burs and are almost never eaten by livestock or people. The seedlings can form dense stands around waterholes and along streambanks. They are moderately palatable and may cause problems with livestock coming to drink at the waterhole.

WEEDY NATURE

A prolific seed producer that is easily spread on animals' coats and people's clothing because of the bur-like seed heads.

COCKLEBUR

(*Xanthium strumarium* L.)



Aceto

COMMON BURDOCK (*Arctium minus* [Hill] Bernh.)

OTHER NAMES

lesser burdock, wild rhubarb, clotbur, beggar's button.

ORIGIN

Europe.

HABITAT

Pastures, fence rows, roadsides, waste places.

DESCRIPTION

Biennial spreading by seed.

Stems: erect from a large fleshy taproot, to 2 m tall, occasionally taller, much branched above.

Leaves: only the basal rosette of leaves is present the first year, stem leaves alternate — one per node, stalked to 30 cm long and 25 cm wide, with a coarsely and shallowly toothed margin, thinly white woolly hairy on the underside tending to become almost hairless when mature, triangular in outline but often heart-shaped at the base.

Flowers: purple, grouped into heads surrounded by a series of bracts (involucre), the outer bracts with a hooked spine making the seed head into a bur easily transported on hair or clothing; the bracts are hairless to somewhat white woolly near the base, the heads are 1-1.5 cm thick and relatively short-stalked.

Seeds: mottled with black — often in a zig-zag pattern, 5-6 mm long by 2.5 mm wide, wedge-shaped but truncate on both ends, sometimes curved on one or both sides, with a prominent rib and less prominent nerves on each face.

Note: woolly burdock (*Arctium tomentosum* Mill.) is a similar species often found growing in conjunction with common burdock. It can be separated from common burdock by the prominently white woolly involucre bracts on the flower head and by the longer stalks on the flower heads.

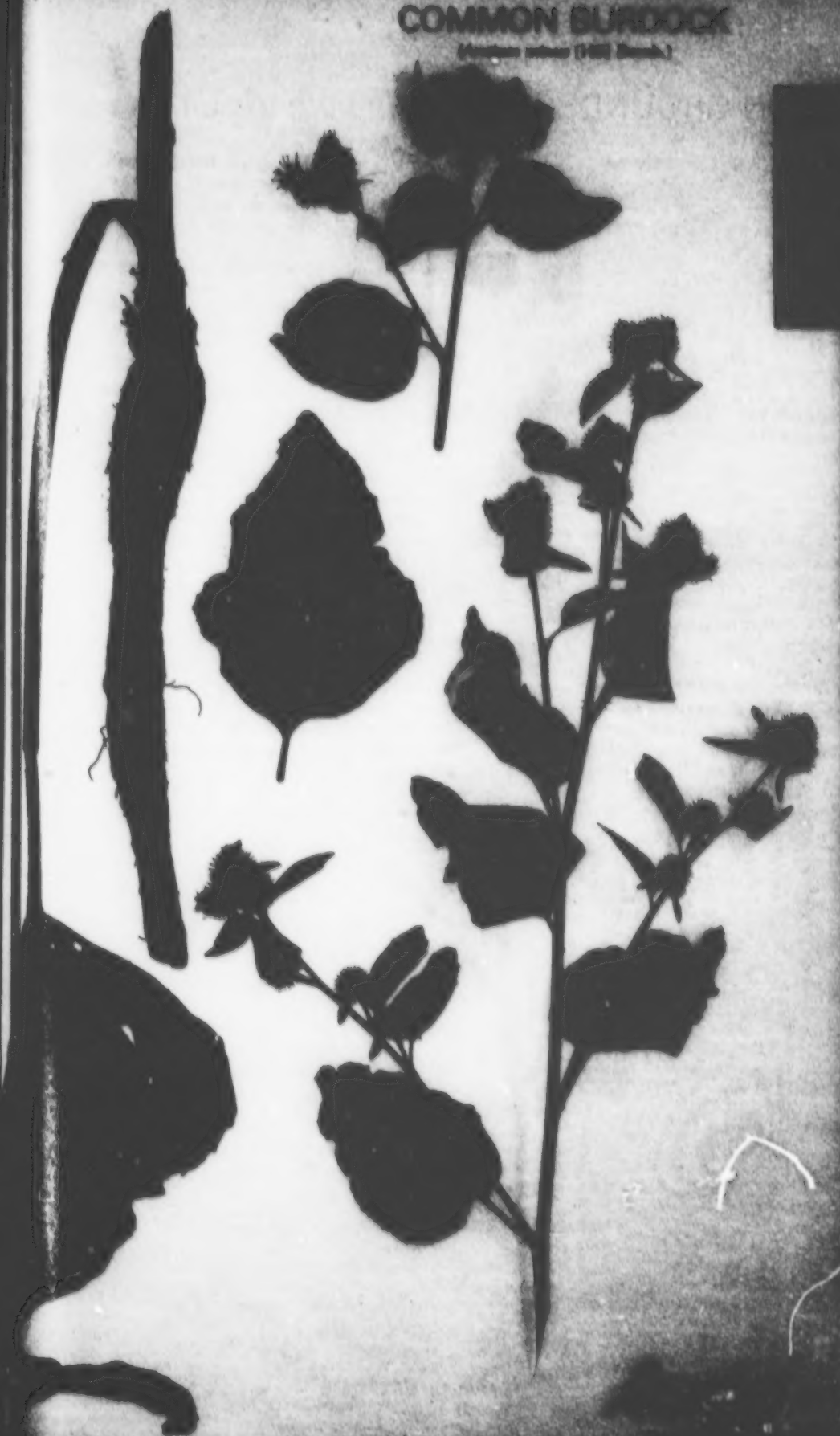
A branch of woolly burdock with a few seed heads was included in the main photograph and flower heads of both species were included in the flower photograph.

AGRICULTURAL CONCERN

Primarily a plant of fence rows, waste areas and stream banks, but occasionally found in biennial forage crops and pastures. Rarely troublesome on cultivated land.

COMMON BURDOCK

(*Xanthoxylum* (L.) Benth.)



COMMON GROUNDSEL (*Senecio vulgaris* L.)

OTHER NAMES

None known.

ORIGIN

Europe.

HABITAT

Appears wherever soil is disturbed, gardens, flower beds and waste areas.

DESCRIPTION

An annual, winter annual or possibly biennial plant which develops from seeds.

Stems: usually 10-40 cm tall, branched, hollow, smooth and rather succulent. They may be erect or reclining.

Leaves: alternate, the lower leaves are stalked while the upper leaves clasp the stem. The leaves are somewhat fleshy, smooth and deeply lobed. They are 5-15 cm long and 1-4 cm wide. The seedling leaves have a characteristic staircase-like toothed margin.

Flowers: several in each head, barely 6 mm long and surrounded by smooth bracts which are almost as long as the flowers.

Seeds: long, narrow and spindle-shaped, 2.5 mm long, tan in colour, covered with short white bristles. A cluster of fine hairs, longer than the seed, is attached at the upper end.

AGRICULTURAL CONCERN

This is a very common weed of lawns, gardens and waste areas where the soil has been disturbed. It does not appear to compete well with cereal or oilseed crops and is seldom a problem there. In home gardens, commercial vegetable plantings and in flower beds it is a serious weed.

WEEDY NATURE

This weed is susceptible to a number of the commonly used weed control chemicals, but because it usually grows in garden or vegetable crops, the use of chemicals is not practical. Seed production is quite profuse and many of the seeds will survive in the soil until it is disturbed.



DANDELION (*Taraxacum officinale* Weber)

OTHER NAMES

blow ball, faceclock, common dandelion.

ORIGIN

Europe.

HABITAT

Lawns, rights-of-way, pastures, forage crops, and waste places.

DESCRIPTION

A tap-rooted perennial that spreads by seed.

Stems: to 50 cm tall, unbranched, without leaves, with a single flower head, several on each plant, hollow, with a milky sap.

Leaves: all basal, to 30 cm long, margins coarsely toothed or the leaves divided into pointed lobes, lacking hairs, have a milky sap.

Flowers: bright yellow, in a head resembling a single flower at the end of a stem.

Seeds: one per flower, grey to brown, 3.5×0.8 mm, longitudinally ribbed, the ribs smooth below the middle of the seed and spiny above, each seed is attached to a parachute of white hairs, enabling it to drift with the wind.

AGRICULTURAL CONCERN

Dandelions are a problem in forage crops and pastures, particularly on soils of low fertility where they can almost completely crowd out the more desirable grasses and legumes.

WEEDY NATURE

They are prolific seed producers that start producing seed early in the spring and the ease of seed dispersal by the wind enables dandelions to spread into unfested areas quickly.

DANDELION

(*Taraxacum officinale* Weber)



A. G. Anderson

Plates prepared by
Saskatchewan Department of Agriculture
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DIFFUSE KNAPWEED (*Centaurea diffusa* Lam.)

OTHER NAMES

None known.

ORIGIN

Eastern Europe and Asia Minor.

HABITAT

Roadsides, waste places, disturbed ground.

DESCRIPTION

A taprooted annual or biennial spreading by seeds.

Stems: erect, much branched, to 60 cm tall, dull greyish green.

Leaves: stem leaves alternate—one per node, basal rosette of leaves is present in young plants, divided into narrow segments except for the first few seedling leaves, lower leaves deciduous, upper ones reduced and sometimes not divided into segments, with a few short stiff hairs and, especially when young, a thin layer of cobweb-like hairs.

Flowers: creamy white or occasionally purplish, grouped into heads about 5 mm wide and 15 mm high; the middle and outer involucre bracts, surrounding the head, have a spine tip with a comb-like fringe of hairs down either side.

Seeds: about 3 mm long, blackish or brownish with several whitish longitudinal lines, the scar where the seed was attached to the plant is in a notch on one side of the seed above the base (this is characteristic of all species of knapweed except Russian knapweed (*C. repens*); the

apex of the seed is truncate with a collar that may have a few bristles attached to it.

Note: Spotted knapweed (*C. Maculosa* Lam.) is a similar weed also found in Alberta. It is a biennial or short-lived perennial with a similar growth habit. However, its leaves are not divided into as many segments, the flowers are normally purple, occasionally white, and the bracts surrounding the flower head have a prominent black tip and lack the strong central spine found on the bracts of diffuse knapweed.

AGRICULTURAL CONCERN

In the interior of British Columbia it has invaded over 60,000 acres of native rangeland eliminating desirable forage species reducing forage production by 85%. In addition the spines present on the seed-heads cause mechanical injury to the mouths and digestive tracts of livestock. Since the climate of the B.C. interior where diffuse knapweed is a serious problem and that of northern Montana where spotted knapweed is a problem is similar to that of southern Alberta, strong measures have to be taken to eliminate the known infestations and prevent the establishment of others.

WEEDY NATURE

Diffuse knapweed is a prolific seed producer. Seed is dispersed mainly by wind as the mature plants break off at ground level and roll with the wind or become attached to vehicles. Knapweed seed will germinate and establish in a wide range of soil types. Once established, the roots of diffuse and spotted knapweed exude chemicals which prevent the germination of other types of plants, thereby allowing the knapweed patches to expand.

DIFFUSE KNAPWEED

(*Centaurea diffusa* Lam.)



NARROW-LEAVED HAWK'S-BEARD (*Crepis tectorum* L.)

OTHER NAMES

annual hawk's-beard, yellow hawk's-beard.

ORIGIN

Naturalized from Europe.

HABITAT

Cultivated fields, roadsides, waste places.

DESCRIPTION

Annual or winter annual spreading by seed.

Stems: branched and leafy, up to 1 m tall with a milky white sap.

Leaves: basal leaves stalked, up to 15 cm long and 4 cm wide, varying from a few small teeth on the margins to a deeply lobed blade; stem leaves stalkless, long and narrow, less than 1 cm wide, often with the margins rolled towards the lower surface.

Flowers: yellow, 30-70 clustered together in heads resembling single flowers, few to many heads per plant, the bracts (modified leaves) around each flower head are 6-9 mm long, hairy and sometimes also glandular.

Seeds: one per flower, from 2.5-4 mm long, about 0.5 mm in diameter, spindle-shaped, and dark purplish-brown when mature, with 10 rough longitudinal ridges, and a tuft of hairs about as long as the seed attached to the top.

AGRICULTURAL CONCERN

Mainly a concern in forage crops, particularly alfalfa seed fields in the north portions of the province or where moisture is adequate.

WEEDY NATURE

Prolific seed producer and the tuft of hairs on the seeds allows for rapid dispersal by wind.



NODDING THISTLE (*Carduus nutans* L.)

OTHER NAMES

musk thistle, musk bristle thistle, plumeless thistle.

ORIGIN

Eurasia and North Africa.

HABITAT

Grasslands, pastures, roadsides, fence rows and waste places.

DESCRIPTION

A taprooted biennial reproducing by seed.

Stems: usually unbranched, to 2.5 m tall with spiny wings except just below the flowering heads. Hairless or somewhat hairy just below the flowering heads.

Leaves: spiny margined and deeply lobed, up to 25 cm long and 8 cm wide, bases extending down the stem as spiny margined wings, hairless or sometimes with long hairs on the midrib and veins on the undersides of the leaves.

Flowers: red to purple, numerous, grouped into 1-3 large heads per plant, each head with an involucre of several rows of spine-tipped bracts; the outer rows of bracts spread outward or more often point backwards, the bracts often have purplish tips.

Seeds: 4 mm long by 1.5 mm, light brown and glossy with darker stripes, a narrow light rim topped by a tuft of hairs (the pappus) 15 mm long forms the apex of the seed; these hairs usually fall off soon after the seed matures.

Note: The plant photographed corresponds to the subspecies *leiophyllus* (Petrovic) Stoi. and Stef., glabrous nodding thistle.

AGRICULTURAL CONCERN

This species has become a real problem in central Saskatchewan. It appears to be present only in scattered locations within Alberta. It should be controlled now before it reaches a serious level.

WEEDY NATURE

A taprooted biennial that spreads rapidly by seed.



OX-EYE DAISY (*Chrysanthemum leucanthemum* L.)

OTHER NAMES

white daisy, white weed, field daisy, mid-summer daisy, Marguerite, poorland flower, moon-penny, poverty weed.

ORIGIN

Eurasia.

HABITAT

Roadsides, pastures and waste places in the forested area of Alberta.

DESCRIPTION

A shallow rooted perennial spreading by rhizomes and seed.

Stems: to 1 m tall, unbranched or nearly so, hairless or nearly so.

Leaves: hairless or occasionally sparsely hairy; basal leaves stalked, to 15 cm long and 5 cm wide, lobed or with a wavy margin; stem leaves, becoming smaller and stalkless, coarsely toothed at least near their bases.

Flowers: grouped into heads 2-5 cm broad, two kinds, the outer ring of flowers in the head have prominent strap-shaped white corollas (petals) 1-2 cm long, the central or disc flowers have much shorter yellow corollas and form the yellow centre portion of the head, the heads are borne singly on the ends of long stalks.

Seeds: one per flower, 1.8×0.7 mm, oval-shaped, with 10 raised white ribs, the intermediate areas brown or black.

AGRICULTURAL CONCERN

When eaten by dairy cattle it imparts a disagreeable taste to the milk. The seed of ox-eye daisy is difficult to separate from small grass seeds such as timothy.

WEEDY NATURE

In its first year from seed it does not develop flowers and the non-flowering leafy rosettes may be easily overlooked. Once established it can quickly replace 50% of the grass in grass pastures.

OX-EYE DAISY
(*Chrysanthemum leucanthemum* L.)



PERENNIAL SOW-THISTLE (*Sonchus arvensis* L.)

OTHER NAMES

creeping sow-thistle, field sow-thistle.

ORIGIN

Eurasia.

HABITAT

Cultivated fields, meadows, roadsides, rights-of-way and waste areas, especially on moist soils.

DESCRIPTION

A perennial reproducing by seed and by horizontally spreading root stalks.

Stems: erect, hollow, to 1.5 m tall, smooth, with a milky sap, branching near the top.

Leaves: alternate, more or less lobbed and toothed, clasping the stem, lower leaves to 30 cm long, upper ones smaller.

Flowers: yellow, grouped into heads at the ends of the branches, heads 3-5 cm across.

Seeds: 3 mm long, brown or reddish brown, longitudinally ridged and transversely corrugated, crowned with a tuft of soft white hairs.

AGRICULTURAL CONCERN

Perennial sow-thistle infestations can cause severe yield reductions and because of their creeping root systems can be difficult to control.

WEEDY NATURE

It produces an extensive underground root system well below the average depth of cultivation. New shoots are sent up from buds on the root system or from any piece of root with a bud. The seeds are widely dispersed by wind and water and may remain dormant in the soil for several years.

PERENNIAL SOW THISTLE

(*Sonchus arvensis* L.)



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PINEAPPLEWEED

(*Matricaria matricarioides* [Less.] Porter)

OTHER NAMES

rayless mayweed.

ORIGIN

The west coast of North America and possibly native to southwestern Alberta. Introduced eastwards and into Europe.

HABITAT

Roadsides, waste places, yards, disturbed ground.

DESCRIPTION

A pineapple-scented annual spreading by seed.

Stems: hairless, branched, to 40 cm tall.

Leaves: alternate, one per node, hairless 1-5 cm long, 2 or 3 times divided (pinnate) into narrow segments 1-2 mm wide.

Flowers: yellowish, very small, grouped into heads resembling a single flower; flower heads 5-9 mm broad and surrounded by a series of modified leaves (involucral bracts) with broad whitish translucent edges.

Seeds: one per flower, 1.0 × 0.3 mm, olive or brown in colour.

AGRICULTURAL CONCERN

No problem in cropland. Minor nuisance in waste areas.

WEEDY NATURE

Not considered weedy.

RUSSIAN KNAPWEED (*Centaurea repens* L.)

OTHER NAMES

Turkestan thistle, Russian centaurea.

ORIGIN

Southern Russia and Asia Minor. Introduced with alfalfa seed.

HABITAT

Cultivated fields, pastures, hay fields and waste places.

DESCRIPTION

A creeping rooted perennial reproducing by rootstalks and seeds.

Stems: 40-80 cm tall, much branched, from creeping roots, densely covered with cobwebby hairs when young, tending to become hairless when mature.

Leaves: the lower leaves to 15 cm long by 4 cm wide, usually with several lobes or teeth, gradually reduced upwards to 1 cm long or less and often with no lobes or teeth.

Flowers: grouped into heads, the heads at the ends of the branches, the bracts of the involucre around the head are green

with broad papery white tips giving the heads a silvery appearance when unopened, heads roughly spherical 10-15 mm broad, flowers purplish to occasionally pinkish in color.

Seeds: about 2 mm long, attached at the base, hairless, white, oval in outline and tapering more towards the base; at first with a series of plumose bristles (Pappus) 3-4 mm long attached to the end but these soon falling off.

AGRICULTURAL CONCERN

It forms dense colonies excluding virtually all other vegetation and is not palatable to livestock making it a serious pasture weed. The deep rootstalks which can send up new shoots from below the depth reached by cultivators makes this a difficult weed to control in cultivated fields. It is not yet common in Alberta but because of the difficulty of controlling it, this weed has the potential of becoming as serious a problem as Canada thistle.

WEEDY NATURE

Perennial spreading by creeping roots as well as by seed. Similar to Canada thistle and quackgrass in that even small pieces of root will establish new plants whenever soil moisture is favourable.



SCENTLESS CHAMOMILE

(*Matricaria maritima* L. var. *agrestis* [Knaf.] Wilmot)

OTHER NAMES

false chamomile, scentless mayweed.

ORIGIN

Europe.

HABITAT

Predominantly found in headlands, rights-of-way, waste areas and forage crops. Becoming an increasing problem in cultivated fields, particularly in areas having solonchetic soil.

DESCRIPTION

Chamomile can act as an annual to a short-lived perennial.

Stems: erect, smooth, multi-branched, and 15-60 cm high.

Roots: many and fibrous, but not creeping.

Leaves: alternate, very finely divided into many thread-like segments. Leaves have almost no smell when crushed, hence the name "Scentless".

Flowers: daisy-like with white ray florets around the margin and numerous yellow

low tubular flowers in the center. Flowering occurs from June to October.

Seeds: 2 mm long, dark brown and slightly grooved.

AGRICULTURAL CONCERN

Although its main habitat at present is forage and non-cropland, chamomile is increasing as a weed in croplands, particularly on solonchetic soils.

WEEDY NATURE

Chamomile can produce up to 300,000 seeds per plant. Seeds are light, float readily on water and hence the first infestations of chamomile in a district are around slough edges and in water courses. Seeds survive for longer periods in undisturbed soil than in cultivated land. Under Alberta conditions chamomile acts as a biennial or short-lived perennial. During the year of germination mainly vegetative growth is produced. Only a small percentage of the plants will flower. If allowed to overwinter the plant will result in a large, bushy, multiple-branched plant which is extremely competitive to crops. The fibrous roots of chamomile allow it to cling to large soil clumps, enhancing its chances of survival in heavy and in particular solonchetic soils, following cultivation.

SCENTLESS CHAMOMILE

(*Matricaria maritima* var. *agrestis* [Knaf.] Wilmot)



A. O. Anderson

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TANSY (*Tanacetum vulgare* L.)

OTHER NAMES

common tansy, golden-buttons.

ORIGIN

Europe.

HABITAT

Fence rows, roadsides, pastures and waste places.

DESCRIPTION

Aromatic perennial mainly spreading by seed but also spreading to a limited extent by rhizomes.

Stems: several in a large cluster to 1.5 m tall, hairless or nearly so.

Leaves: many, 10-20 cm long by 4-8 cm wide, stalkless or nearly so, pinnately divided into many leaflets, these often divided again, dotted with numerous small glands.

Flowers: small, yellow grouped into button-like heads resembling a single flower; heads about 1 cm wide, 20-200 per plant, grouped in conspicuous flat-topped clusters, all flowers in the heads are alike.

Seeds: small, 1.5 mm long, grey or tan, with longitudinal ridges.

AGRICULTURAL CONCERN

Tansy is not a problem in cultivated crops. It can become a problem in pastures because it is unpalatable to livestock and thus tends to increase in grazed pastures. Once established in a pasture it can be especially serious because it is poisonous and can cause abortion or death in animals forced to eat it by a lack of more suitable forage.

WEEDY NATURE

Once introduced, tansy spreads rapidly along the roadsides and waste areas.

TANSY
(*Tanacetum vulgare* L.)



NOTES

TEASEL FAMILY
Dipsacaceae

FIELD SCABIOUS (*Knautia arvensis* [L.] Duby.)

OTHER NAMES

None known.

ORIGIN

Europe.

HABITAT

Roadsides, pastures and waste places.

DESCRIPTION

A taprooted perennial spreading by seed.

Stems: to 1.3 m tall, sparsely branched above, more or less covered with short stiff hairs, often with purple spots.

Leaves: two per node on opposite sides of the stem, to 25 cm long by 6 cm wide, more or less covered with short stiff hairs, the lowest ones coarsely toothed, the mid-

dle ones pinnately lobed, the upper ones reduced.

Flowers: blue to purple in colour, grouped into heads, petals fused into the tube with 4 or 5 unequal lobes on the end, the flowers around the margins of the heads have longer petals than the central flowers; heads 1.5-4 cm in diameter on the ends of long leafless stalks; each head has a ring of narrow green bracts around the outside.

Seeds: one per flower, 5-6 mm × 2 mm, 4 angled, covered with long straight hairs.

AGRICULTURAL CONCERN

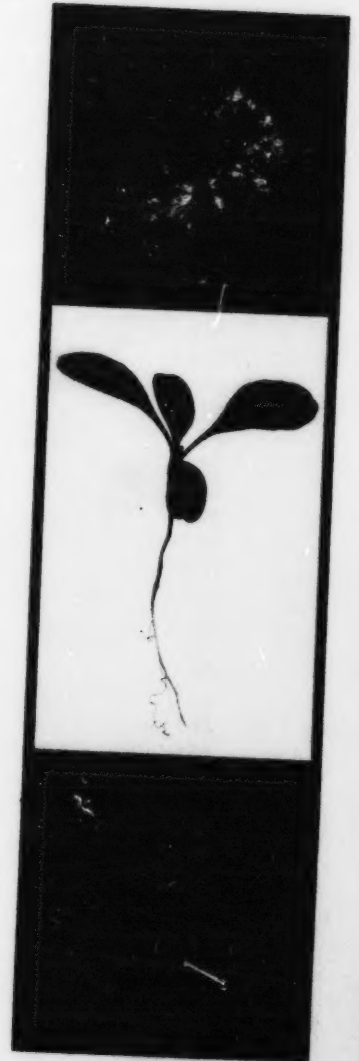
An effective competitor in native and mountain pastures.

WEEDY NATURE

Species is difficult to remove once established.

FIELD SCABIOUS

(*Knautia arvensis* [L.] Duby.)



Alberta
AGRICULTURE

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larkspur, tall	42	neslia	102
leafy euphorbia	166	<i>Neslia paniculata</i>	102
leafy spurge	166	nettle, stinging	126
Legume Family	77	Nettle Family	125
Leguminosae	77	night-flowering catchfly	142
lens podded hoary-cress	112	night-flowering silene	142
<i>Lepidium desiflorum</i>	104	nightshade, black	154
<i>ramosissimum</i>	104	nightshade, hairy	154
lesser burdock	176	nodding thistle	186
Liliaceae	85	Norwegian cinquefoil	162
Lily Family	85	Nuttall's larkspur	40
<i>Linaria vulgaris</i>	46	oat grass	74
<i>dalmatica</i>	46	oats, wild	74
little larkspur	40	ox-eye daisy	188
<i>Lolium persicum</i>	70	pale smartweed	26
low larkspur	40	pennycress	116
low pigweed	158	pepper plant	114
lupine, silky	80	peppergrass, branched	104
lupine, silvery	80	peppergrass, common	104
<i>Lupinus argenteus</i>	80	perennial gypsophila	130
<i>sericeus</i>	80	perennial lupine	80
<i>Lychnis alba</i>	144	perennial peppergrass	112
Mackenzie water-hemlock	36	perennial snapdragon	46
madderwort	170	perennial sow thistle	190
maiden's-breath	130	Persian darnel	70
major plantain	140	pick pocket	114
mallow, cluster	90	pigeon grass	68
mallow, common	90	pigweed	2, 56
mallow, round-leaved	90	pigweed, redroot	2
mallow, small-flowered	90	pin-clover	50
Mallow Family	89	pinappleweed	192
marsh arrow-grass	6	Pink Family	129
<i>Malva neglecta</i>	90	plantain, broad-leaved	148
<i>parviflora</i>	90	Plantain Family	147
<i>rotundifolia</i>	90	Plantaginaceae	147
<i>verticillata</i>	90	<i>Plantago major</i>	148
Malvaceae	89	plumeless thistle	186
Marguerite	188	poison hemlock	36
<i>Matricaria maritima</i> var <i>agrestis</i>	196	poison parsnip	36
<i>matricarioides</i>	192	Polygonaceae	25
meadow death camas	86	<i>Polygonum convolvulus</i>	30
Mexican fireweed	54	<i>lapathifolium</i>	26
midsummer daisy	188	<i>persicaria</i>	26
milk-vetch, narrow-leaved	78	<i>scabrum</i>	26
milk-vetch, two-grooved	82	poor man's pepper	104
Mint Family	93	poor oats	74

poorland flower	188	silvery lupine	80
<i>Portulaca oleracea</i>	158	<i>Sium suave</i>	34
Portulacaceae	157	small-flowered mallow	90
Potato Family	151	small-flowered morning glory	14
<i>Potentilla norvegica</i>	162	smartweed, annual	26
poverty weed	188	smooth camas	86
prairie peppergrass	104	snake root	36
prickly barnyard grass	62	snakeweed	36
purslane	158	Snapdragon Family	45
Purslane Family	157	Solanaceae	151
pusley	158	<i>Solanum nigrum</i>	154
quack grass	72	<i>sarrachoides</i>	154
quick grass	72	<i>Sonchus arvensis</i>	190
quitch grass	72	sow-thistle, perennial	190
radish, wild	120	<i>Spergula arvensis</i>	136
ramstead	46	spiny cocklebur	174
Ranunculaceae	39	spotted cowbane	36
<i>Raphanus raphanistrum</i>	120	spotted hemlock	36
rattleweed	132	spotted knapweed	182
rayless mayweed	192	spotted parsley	36
red belvedere	54	spurry, corn	136
redroot amaranth	2	spurge, leafy	166
redroot pigweed	2	Spurge Family	165
redstem filaree	50	<i>Stellaria media</i>	134
rippleseed plantain	148	stickseed	22
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Rosaceae	161	sticky cockle	142
Rose Family	161	stinging nettle	126
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Rubiaceae	9	tall larkspur	42
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Russian centaurea	194	tansy mustard	110
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<i>Scleranthus annuus</i>	140	toadflax	46
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<i>Senecio vulgaris</i>	178	<i>palustris</i>	6
<i>Setaria viridis</i>	68	tumbling Russian thistle	58
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<i>cucubalis</i>	132	<i>Urtica dioica</i>	126
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water-hemlock, MacKenzie	36	wild parsnip	36
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water-parsnip	34	wild radish	120
way bread	148	wild rhubarb	176
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white camas	86	wolf's-milk	166
white campion	144	woolly burdock	176
white charlock	120	wormseed mustard	122
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white daisy	188	<i>Xanthium spinosum</i>	174
white goosefoot	56	<i>strumarium</i>	174
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white top	112	yellow toadflax	46
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